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# INTERNATIONAL ABSTRACT OF SURGERY

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JULY, 1914

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## MONTHLY COLLECTIVE REVIEW

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### PHYSIOLOGY OF INTERNAL SECRETIONS OF THE OVARY

By CAREY CULBERTSON, M. D., CHICAGO

IN the scope of this review it is proposed to include only the most recent literature, valuable collaborations having been offered on this or closely allied subjects by Bell, McIlroy, Graves and others, within a relatively short time. While harmony and efficiency on the part of the entire endocrinous system is essential to the functional activity of the female genitalia at puberty, granted that these organs are normal at birth, and it is therefore difficult to consider any part of this system as an entity, yet consideration is contemplated at this time only of the internal secretions of the ovary, with special reference, at that, to the function of the corpus luteum.

To-day, from a purely physiological point of view, the ovary has come to be regarded as having three constituent activities: those of the graafian follicle, the corpus luteum, and the interstitial cells. Regarding the first two, nothing need be said in an academic way. Of the last, the importance of the interstitial cells has more recently come to be recognized. These are distinguished from the stroma cells by their larger size and rounder outline, with oval nuclei. They increase during pregnancy and are probably most marked between infancy and puberty. That these cells possess a function is fairly well established by McIlroy and Limon who found that their presence in grafts was sufficient for maintaining uterine nourishment. Also, when one ovary is removed and compensatory hypertrophy has occurred in the other, the interstitial cells are found to be increased correspondingly both in size and number. It is most probable that

the secretion from these cells acts independently of the follicles and corpora lutea and is not antagonistic to them. Without definite knowledge, it is assumed that these cells control the nutrition of the genital organs and breasts during their active development, and that it is the loss of their secretion, a true hormone, that brings about uterine atrophy after complete oöphorectomy. According to Bell, as far as the general metabolism goes, the total ovarian secretion seems to promote the excretion of calcium and the retention of phosphorus, but he does not attribute this function to the interstitial cells alone. On the other hand, no other investigators refer this feature to either the follicle or corpus luteum. Nevertheless, in one of McIlroy's experiments, calcium elimination was increased after castration and diminished again after giving corpus luteum extract. The influence of the ovary on sugar metabolism is another point in evidence rather of our lack of knowledge regarding correlation on the part of the ductless glands. Thus, Seitz concludes that the thyroid, hypophysis, and chromaffin system increase sugar metabolism, and that the pancreas, ovary, and parathyroids tend to check it. In an elaborate series of experiments Stolper regards it as probable that increased sugar assimilation means increased ovarian sufficiency. He found sugar assimilation reduced in castrated animals and in 38 women from whom both ovaries had been removed. He admits that the process is very complex, results being due in part to the effect on the pancreas and adrenals, glands evidently closely associated with the ovary. In partial resection of the pancreas, as carried out

on dogs, sugar assimilation was decreased and then compensated for, to a certain degree only, by feeding ovarian substance. When, however, the ovary was removed in addition to pancreatic resection, a further reduction in sugar metabolism was observed. Stolper more recently is of the opinion that absence of ovarian function produces the decrease in sugar tolerance by its influence on the pancreas and adrenals. Hence, what is most probable, total ovarian insufficiency arouses increased activity on the part of most, if not all, of the other ductless glands. With our present knowledge this influence is most difficult to measure, and the part which the interstitial cells perform in maintaining the balance of power throughout the endocrinous system is but problematical.

#### SECONDARY SEXUAL CHARACTERISTICS

One of the most desirable results of perfect correlation on the part of these ductless glands is the production of the so-called secondary sexual characteristics, occurring in both sexes at puberty. The conviction is rapidly growing that these secondary sex characteristics are due to the influence of genital hormones, arising from the ovary and testicle respectively. Past experimentation has shown the influence on the general system of castration in either sex, before puberty and after, and these changes are too well known to require review at this time. A new phase was given to this question in 1912 by Steinach, who transplanted sex glands in young castrated animals of opposite sex. This resulted in completely checking and even reversing the physical features and traits recognized as characteristic of and specific for each sex. More recently, the same investigator has succeeded in producing entirely similar changes in adult animals who had developed sex characteristics before castration, thus demonstrating that sex is not fundamentally determined in advance. The only conclusion possible is that the essential factors for the production of the genital hormones are the interstitial cells found in the genital glands of both sexes.

#### THE CORPUS LUTEUM AS A GLAND

While Born was the first to propose that the corpus luteum should be regarded as a gland of internal secretion, with particular respect to the implantation and development of the fertilized ovum, it has remained for Fränkel, Magnus, and Cohn to prove experimentally Born's theory. The original work of Fränkel is now well known, that the removal of the corpus luteum prevented pregnancy or caused the disappearance of the ovum in the early months but that it had no in-

fluence on pregnancy later. Weymersch had added to this the explanation that destruction of the corpus luteum is followed by constriction of the uterine blood-vessels and by uterine contractions, thus inhibiting circulation of the blood freely throughout the organ. While most clinicians have observed that these laws cannot apply strictly to the human female, it has remained for Cathala to analyze a series of cases. As a result he concludes that the corpus luteum is not indispensable and that its removal in the early months is not to be considered as a cause for abortion. Puech and Vanverts take issue with him in part, however, showing that abortion is more frequent during the first two months of pregnancy — 25 per cent — than during the third — 11 per cent — or fourth — 12 per cent — after double ovariectomy. They also show that abortion follows oftener after bilateral oöphorectomy — 25 per cent — than after unilateral — 16.5 per cent — when the operation is performed during the first two months of gestation.

An interesting point in the study of the corpus luteum has been added by Escher, who isolated the pigment of the body from the ovaries of cows. He found that it belongs to the lutein group of hydrocarbons and that it is not different in any respect from the vegetable carotin, a pigment of certain vegetables and green leaves. Its origin and function are uncertain, except that it has nothing in common with hæmatoidin or bilirubin.

The nature of this ovarian secretion has recently been carried a step further by Iscovesco. This investigator undertook his problem on the basis that all living cells are formed of proteids, carbohydrates, and lipoids. Among the lipoids are found neutral fats, lipoids both phosphated and non-phosphated. The lipid responds chemically in all respects the same as the internal secretions. Thus the thyroid possesses an entire series of lipoids. Iscovesco worked with one of the lipoids of the ovary, soluble in oils, in all neutral fats forming liquids with ether, in petrol, acetone, chloroform, benzol, and boiling alcohol. This fatty solution, injected into rabbits, produced uterine and ovarian hypertrophy, with marked congestion and extravasations in extreme doses. A similar lipid from the testicle exerted corresponding changes in the male. Again, a specific lipid from the corpus luteum increased postpartum involution and lessened nausea and vomiting. There seems to be a direct antagonism between the lipoids of the corpus luteum and those of the suprarenals. Iscovesco has come to the conclusion that in every organ of vertebrates may be found a specific lipid which has the property



of exciting the function of that organ, each one being a homostimulant acting on the medullary center which presides over that particular organ.

Aschner previously and Herrmann more recently have arrived at similarly suggestive results, their work varying only in regard to method. Aschner, in substantiation of Fränkel's theory of the relation of the corpus luteum to pregnancy, also produced a lipoid specific in action. Employing a subcutaneous injection of ovarian extract and placental extract to produce milk secretion, he noted the hyperæmia of the genitalia and was able to produce hæmorrhage, even hæmatomata in the uterine mucous membrane of guinea pigs. The ovaries were found to contain an unusual number of ripening follicles, to which Aschner attributed the genital hyperæmia. Herrmann isolated a pentaminodiphosphatid from the corpus luteum of rabbits. An extract of this substance injected into the animal brought about hypertrophy of the genital organs and breasts. Histologically there appeared a marked hypertrophy of the muscularis and mucous membrane. In one animal so tested before maturity, where the uterus was undeveloped, a hyperæmia and cedema of the stroma took place, similar to the changes of secretory activity. Corresponding hypertrophy and hyperplasia were found in the mammary acini, the ovaries became enlarged and a ripening follicle was found. In the case of mature rabbits Herrmann was able to induce oestrus by injection of the phosphatid, changing the four-weekly cycle to a two-weekly one in three different animals. Again, in an immature animal the ovaries were removed and the phosphatid again injected over a period of five weeks. The same changes were again produced, thus more than overcoming the castration atrophy.

In like manner Stickel's experiments demonstrated that ovarian extract, and particularly the extract made from the corpus luteum, has the most pronounced effect on the uterus. To produce sterility he subjected a series of rabbits to the X-ray and found that in them the uterine curve was similar to that in virgin animals, the uterine response to the extract being less marked after raying. Ovarian extract from rabbits that have been rayed possesses an especially active influence on the uterus of other rabbits, similarly rendered sterile. Spontaneous uterine contractions are nearly always present in rabbits that have delivered young, and Stickel suggests that the ovarian hormone is antagonistic to whatever other influence may inhibit such uterine contractions.

Similar results to these have been reported by Fellner, who used alcohol-ether extracts not only of the ovary but of early chorionic villi. The most characteristic results were obtained when these extracts came from pregnant animals. When the ovaries contained no corpora lutea, results were negative. Though Fellner was unable to decide as to whether or not he was dealing with an internal secretion in his placental extract, his results so closely resemble Herrmann's as to suggest again a powerful phosphatid. Halban regards their combined results as further evidence in support of his theory that the placenta takes over in large part the function of the ovary.

Experiments to detect an antibody in the blood-serum of women was undertaken by Smith as a result of which he concludes that the term "internal secretion" need not necessarily imply such a substance as would produce an antibody. Using an extract of corpus luteum as antigen he attempted to detect the presence of an internal secretion by the complement-deviation test, but with negative results. Keller also found it impossible to test the function of the ovary by producing a reaction to injections of adrenalin, atropine, or pilocarpine. His experiments in twenty cases where the ovaries were absent or not functioning were based on the idea of the ovary possessing an inhibitory influence on the chromaffin system, as demonstrated by Christofoletti and Adler, but the results were almost uniformly negative.

#### THE CORPUS LUTEUM AND MENSTRUATION

With respect to the corpus luteum during menstruation, experimental results are less satisfactory. Schröder made comparative observations on the endometrium and corpus luteum in 100 cases, in 69 of which menstruation was regular, being irregular in 11 with conformity, however, to the corpus luteum cycle. His work is interesting and presents a four-stage cycle:

1. Fifteen to twenty days after the beginning of menstruation the endometrium shows the characteristics of the middle or end of the interval. The corpus luteum is then going through the first stages of its development. The granulosa cells are small, but gradually increasing in size, with abundant red blood-cells between. The limiting fibrous membrane shows some unraveling, with an arrangement of the finest fibrils in a radial direction. Capillaries are beginning to form, as are the theca cells in characteristic concentrically arranged fields.

2. From 18 to 25 days, the endometrium shows the beginning to the middle of the premenstrual



stage. The corpus luteum is mature, with large-celled, convoluted granulosa, many fine fibrils and capillaries running in radial direction. There is a thin but clearly defined internal connective-tissue boundary and a clearly marked, small-celled, peripheral theca interna.

3. From 24 to 28 days, the endometrium is at the end of the premenstruum, anatomical menstruation. The corpus luteum is fully developed and organized. Granulosa cells are similar to those in (2) but the radial and transverse fibrils are more abundant, surrounding each cell with a fine network. The internal connective-tissue boundary is very well developed, with well-marked fields of small theca cells.

4. One to 14 days. The endometrium is at the post-menstrual interval, the corpus luteum being also in retrogression. The granulosa cells are shriveled, bursted by the continuously increasing growth of the fibrils. The internal connective-tissue layer is thicker and nuclear organization has occurred. The cells of the theca interna are clear and well developed.

Schröder therefore concludes that the ripened follicle ruptures on the fourteenth to sixteenth day from the beginning of menstrual bleeding and that the rapidly developing corpus luteum normally matures at the time of the premenstrual swelling of the uterine mucosa and that it is the cause of this change.

Meyer and Ruge, on the other hand, have attempted to establish a five-stage normal sequence for the corpus luteum: (1) The hyperæmic stage, during the menstrual interval. (2) The stage of vascularization, early in the premenstrual congestion of the uterine mucosa. (3) The hæmorrhagic stage, during the marked premenstrual phase. (4) The height of hæmorrhagic infiltration of both corpus luteum and mucous membrane, just before or at the beginning of menstruation. (5) Regression during and after menstruation. During pregnancy the corpus luteum remains at the high point of its hæmorrhagic stage.

Without going so deeply into the histologic changes occurring in the ovary synchronously with the menstrual cycle, Fränkel regards ovulation as regularly occurring during the intermenstruum, claiming that the exact age of the corpus luteum cannot be determined microscopically. His opinions have been confirmed by Miller, Seitz, Landsberg, Meyer, and Schröder. Miller regards menstruation as a mere retrogressive process after a hyperæmia of the uterus preparatory for pregnancy. Incidentally, he claims that there is no such thing as post-menstrual embedding but that the ovum corresponding to the first sup-

pressed menstruation is the one fertilized and implanted.

While Meyer and Ruge are not so far from Schröder in their estimation of the relation borne by the corpus luteum to menstruation, Halban has brought to bear on the question the light of his clinical experience. In the course of thirty-five laparotomies the ovary was deprived of its yellow body and careful notation made with respect to subsequent menstruation. It was found that where this procedure was undertaken at once after menstruation there was no change in the menstrual order. Where, however, the corpus luteum was destroyed during the second half of the interval, menstruation occurred one or two days after the operation, the next period following in four weeks, thus establishing a new time for the cycle. Thus the corpus luteum must be regarded as inhibiting the onset of the next menstrual period, as it apparently does by persisting in pregnancy. Its influence as the factor determining the uterine changes of menstruation seems to be fairly well established. Dannreuther's case provides further evidence to the point. Here corpus luteum extract was administered to a patient after bilateral salpingo-oöphorectomy, with a re-establishment of menstruation. The extract was made from the ovaries of pregnant animals, an essential factor for securing most certain results in Dannreuther's opinion. Thus the corpus luteum becomes the source of the hormone governing such changes as are essential in preparing the mucous membrane for the reception of the fertilized ovum, the premenstrual changes. In what way it maintains itself in case pregnancy takes place, or through what agency it is maintained, is not yet clear. Evidently here the activity of other internal secretions come into play, either those of glands already active, or some new substance introduced by new tissues, such as, for instance, the chorionic trophoblast.

#### OVARIAN AND UTERINE EXTRACTS AND THE BLOOD

Granting, then, an influence on the part of the corpus luteum over menstruation, the next thought is that ovarian hyperfunction might serve etiologically in excessive uterine bleeding, or that a definitely abnormal uterine mucous membrane might overact to the stimulating hormone. The work of Hitschmann and Adler has finally given us a knowledge concerning the cyclic changes in the uterus characterizing menstruation, but the physiology of this series of phenomena remains far from certain. The pathology behind many forms of uterine hæmorrhage is well under-



stood, but the theories explaining certain menorrhagias and metrorrhagias as due to glandular endometritis, metritis, cystic degeneration of the ovaries, chronic oöphoritis, etc., as pointed out by Graves, have been given up. On the hypothesis that menstruation is not a function but a mere retrogressive change following activation on the part of the uterine mucosa by a corpus luteum hormone, implantation of a fertilized ovum not having occurred, uterine hæmorrhage may be studied from the point of view of ovarian physiology. This leads, then, to a study of the relation between ovarian and uterine extracts and the blood.

Schichele's experiments have been most interesting. Combinations of animal blood serums and plasma were added to extracts of different portions of the uterus and ovaries. Such extracts delayed coagulation variously, those from organs subject to abnormal bleeding producing a more marked reaction, the endometrium being more powerful than the myometrium, and ovarian extract causing less delay except in cases where there had been excessive bleeding. His extracts, further, produced a dilatation of peripheral blood-vessels, thus lowering blood-pressure. This would agree with Herrmann's finding that extract of corpus luteum does not raise the blood-pressure. Gizelt found rapid coagulability following organic extracts from the uterus, placenta, and ovum. He attributes this to "thrombokinas" which, together with another substance, "vasodilatin," he recovered from the juices of the uterus. If vasodilatin be removed, or if it be lacking, coagulation occurs more quickly than when it is present. Kiutsi isolated a specific substance from the corpus luteum, taking particular pains to exclude other portions of the ovary. Human blood tested with this extract responded by very rapid coagulation. He believes that during normal menstruation blood coagulability is favored by lutein cells freed when the graafian follicle ruptures, the substance then entering the blood stream and bringing about cessation of the menstrual flow.

While these experiments are to be regarded with caution, as pointed out by Graves, the conclusion seems not far fetched that the ovaries produce a substance that is stored up in the endometrium, or uterus, and that is capable of producing dilatation of the blood-vessels, delaying coagulation of the blood for a short time. Such a view seems to be favored by Rabinowitz, in discussing hæmorrhage due to cervical myoma. He regards the etiology of the tumor growth itself as probably a perverted ovarian secretion

(dysfunction) and speaks of a "myomhormone" as the factor in celebrates in whom sexual energy, while still active, finds abnormal expression in tumor development. In multiparæ this is expressed by a relative sterility. Metrorrhagias of the menopause, with no apparent uterine lesion, are regarded by Forgue and Massabueu as essential metrorrhagia due to a disturbance of the ovarian hormone which normally presides over menstruation. In these cases bleeding ceases if the ovaries are removed, and the majority of such ovaries are subject to cystic degeneration. Their opinion is that in neurocystic ovaries an overproduction of the interstitial cells takes place with hypertrophy of the gland of internal secretion. This in turn may be the result of a general failure to correlate on the part of the vascular glands presiding over the development and suppression of menstruation. The theory that metrorrhagia of this type or hæmorrhage from myomata is due to ovarian hyperfunction is strongly supported by the beneficial results of the X-ray, as reported by Krönig and Gauss, Fränkel, and many other clinicians. Decreased bleeding or amenorrhœa follows the destructive effect of the ray on the ovarian parenchyma, with secondary atrophy of the uterus. How much of this influence is due to direct action of the X-ray on the uterus is not clear, but the changes in the ovary seem to be definite, at least for a time.

A different application of a somewhat similar theory led Kalledey to treat 29 cases of dysmenorrhœa and 5 of uterine hæmorrhage with extract of corpus luteum. All of his cases were symptomatically cured and 5 of the 21 sterile women became pregnant. Ovarian hypofunction is the explanation here offered, uterine insufficiency being due to correlative disturbances in the organs of internal secretion. Naturally, the question is left open as to whether results obtained were brought about directly by the hormones used or by the hormones produced through stimulation from the injected material.

#### THE CORPUS LUTEUM AND PREGNANCY

The possibility of the foetal cells in early pregnancy providing a new chemical substance acting as an internal secretion has already been suggested by the work of Fellner who found at least two lipoids in the placenta, possessing different chemical and physiological properties. Young, however, carries this idea further in attributing to these embryonic cells the power of activating the interstitial cell of the uterine mucosa to undergo the further change into the decidual cell. Young speaks, therefore, of a chorionic



influence which in some way or other determines the occurrence of protoplasmic changes in the cells characteristic of decidual formation. Thus he takes issue directly with those investigators who have heretofore upheld the theory that decidual formation is due to some so-called "genetic influence" having its origin in the ovary. Accepting this attractive idea we are at once led to regard the rapidly proliferating ectodermal cell as providing an internal secretion capable of activating further a cell already influenced to moderate oedema by the corpus luteum lipoid or phosphatid. Such a theory makes the early villi, for the time being, complementary to the corpus luteum and sustains Halban's proposition that the placenta takes over in some degree the ovarian function. Carrying the idea one step further, it is presumable that the corpus luteum itself is maintained as a permanent anatomic entity having a definite physiologic function during pregnancy through the influence of this very same placental cell product. This theory, of course, leaves out of consideration the influence of the other glands of internal secretion.

It is the belief of Seitz that the function of the corpus luteum is short-lived, lasting only during the first month of pregnancy, the interstitial ovarian cells then developing and working synergetically with the yellow body. Irregular growth and development, then, on the part of the corpus luteum may explain habitual abortion. Likewise, destruction of the corpus luteum early in pregnancy in the lower animals, as shown by Fränkel, will lead to abortion. On the contrary, destruction of the chorionic villi by termination of pregnancy may be the factor permitting regression of the corpus luteum, with recurrent ovulation and menstruation. At all events, Seitz believes that the changes of the ovarian interstitial cells in pregnancy are stimulated by the placental cell change. He further claims that a pathologic overgrowth of trophoblast, as in vesicular mole or chorioepithelioma, leads to the production of the lutein cyst.

Keller's observations from a series of operations performed during pregnancy assured him that a succession of special changes occur in the ovary, such as marked vascularization, growth of theca-lutein cells, the construction of the corpus luteum, and the development of interstitial cells, changes evidently significant of special function. He found no recent corpora lutea in the second half of gestation, nor one that appeared to be in retrogression. No follicle beyond the stage of ripening was found, nor on the point of rupture. That ovulation may occur during pregnancy is

most improbable, though follicles may ripen and even escape. While considering the physiology of the corpus luteum during pregnancy the possibility of a dysfunction again comes to mind. It has been suggested that, since ovulation does not occur, the ovary subsides into what should correspond to a resting stage. This does not seem to be in accordance with the evidence. Not only are the interstitial cells more in evidence, but the corpus luteum becomes, for the time being, a permanent structure. Whatever changes in general metabolism occur when this body fails to be maintained has not been determined, but certain investigators have ascribed to its insufficiency some of the pregnancy complications of the early months, such as pernicious anæmia, hyperemesis, etc. Thus Chirea and Stolper believe that such a relation exists. Without formulating definite conclusions, Chirea assumes that one of the functions of the corpus luteum is to antagonize the toxin elaborated by the chorionic villi, and that lutein deficiency, therefore, permits the placental cell products to become assertive. He reports one case of excessive emesis in which death ensued. Autopsy revealed considerable enlargement of the right ovary which contained a large yellow body in a state of cystic degeneration. The left ovary was small, but cystic, the uterus and placenta negative. As a result of the cystic distention and increase in connective tissue the lutein cell band was markedly atrophic. Chirea has used tablets of lutein in treating his cases of emesis, but results have varied. Recasens calls attention to the fact that functional disturbance in the early weeks of gestation is radically different from the pathological processes of the ultimate months. Stolper notes this as well, and both regard lutein hypofunction as at least one factor in hyperemesis gravidarum. In early gestation the entrance of albuminoids from the ovum into the maternal organism causes disturbances which are signs of immunity, with subsequent formation of antibodies. These activate the functions of the various permanent glands and the temporary corpus luteum. If injury to the cell structure is effected, adding to the activity of albumin products from the ovum, these signs of immunity in the early months may go on to the development of a toxæmia, such as incoercible vomiting. Finally, Sergent and Liau regard the cortical layer of the suprarenal capsules as one of the lines of defense for the female organism in gestation which neutralizes the auto-intoxication of the early months, called by them, "villo toxæmia." Often this is so severe that the suprarenal capsules give out and fail in their function.



## OVARIAN EXTRACT IN THERAPY

While our knowledge of ovarian physiology is thus far very imperfect, efforts at some therapeutic application of the ovarian secretions have been reported for many years and, until recently, with most indifferent success. When thyroid extract came to be used successfully in certain types of hypothyroidism, clinicians made haste to apply the same empiricism in the use of ovarian extract, but with disappointing results. Only from the most recent studies in ovarian physiology, such as have just been reviewed, have we begun to find some explanation for this apparent inconsistency. The thyroid gland evidently produces its hormones more or less constantly; that is, the active principle is probably present in its tissues at all times, so that by feeding the gland, either fresh or in extract, its organic influence is transmitted. In the ovary, conditions are quite different. It is most probable that the interstitial cells are enlarged only at certain times, if indeed this means that they are actively engaged in the production of a secretion. With the follicle and corpus luteum we have a definite, recurrent growth and regression, wherefore any secretion coming from them would be present only on occasion. Thus it is evident that any internal secretions from the ovary would be obtained in extract only provided that the organ was actively functioning at the time the extract was prepared. Again, if it is the purpose of the interstitial cells to guard the growth and development of the uterus, it is clear that they would be most active during the age of puberty and less so after nubility. They have, however, been observed later in life and often during pregnancy, hence their function is probably more complex. As regards the follicle, if it is the function of the internal theca-cells to produce the premenstrual congestion and of the lutein cells, as successors, to maintain this influence in preventing further ovulation and in aiding the newly implanted ovum at least for a month or two, then its hormone could be collected in extract for but a few days at a time in case gestation does not take place. This explains, at least, how difficult it may be to secure activating ovarian extract for commercial purposes and, therefore, why therapeutic results from past clinical experience have been so varied and uncertain. It is probably for these reasons that Dannreuther considers the corpus luteum of pregnancy as more stable and efficient than that of ovulation, and hence, while agreeing with Burnham as to its therapeutic value, emphasizes the importance of preparing the extract from the ovaries of pregnant animals

only. He regards such an extract, administered by mouth, as non-toxic, but warns that the blood-pressure be not allowed to fall below 90 mm. Hg. under any circumstances and not more than 15 mm. Hg. at any one time. Aschner believes that such an extract brings about a hyperæmia of the genitalia and suggests its use in the treatment of amenorrhœa, sterility, and menopause troubles. As a result of his experiments with the phosphated lipid (ovarian) previously referred to, Iscovesco assigns to it great influence in certain hæmorrhages, amenorrhœa, dysmenorrhœa, hypovarianism, sterilization, and the menopause. He also suggests that the deficiency of this influence is a factor in the chlorosis of puberty and in the feebleness of senility. According to Dannreuther, corpus luteum of pregnancy is indicated in (1) functional amenorrhœa, or scanty menstruation; (2) dysmenorrhœa of ovarian origin; (3) manifestations of physiologic or artificial menopause; (4) neurasthenic symptoms during menstrual life; (5) sterility not due to pyogenic infection or mechanical obstruction; (6) ovarian insufficiency where the function of one ovary is impaired, or one has been removed, and compensatory activity in the other has not taken place; (7) repeated abortions not due to disease or mechanical factors; (8) hyperemesis in the early months of pregnancy. Hill's clinical experience is in accordance with such indications. He treated with the extract of corpus luteum 12 patients from 25 to 38 years of age, all of whom had lost both ovaries by operation and showed severe types of nervous disorder. In every case improvement occurred, though complete relief was experienced in but two cases, and relapses occurred where treatment ceased. He agrees with Burnham and Dannreuther that insufficient dosage explains past failures.

In certain types of sterility where alterations of the ovary are present, Reynolds finds a slight or moderate organic enlargement due to retention cysts or to unduly large, persistent, and frequently cystic corpora lutea. In such cases extract of corpora lutea would be contra-indicated, and instead Reynolds advocates resection of the retention cysts or persistent yellow bodies.

Osteomalacia is always to be considered in discussing ovarian physiology or pathology. Seitz does not regard physiological osteomalacia as proven, though acknowledging that bone metabolism is decreased through the ovarian influence. Schnell has reviewed the treatment of osteomalacia during the last fifteen years. He does not regard this condition as an expression of hyperovarianism, but thinks that it is due rather



to changes in metabolism from the action of various ductless glands. Three hundred and thirty-four cases were collected. Of these 37 were treated by phosphorus, 105 by castration, 36 by adrenalin, 1 by antithyroidin, 16 by pituitrin, 2 by milk from castrated goats, and 6 by the X-ray. With but 7 recurrences in the series treated by oöphorectomy, Schnell claims that this operation still offers the fewest bad results, being much preferred to treatment by hormones, such as adrenalin and pituitrin.

On the other hand, a case of acromegaly is reported by Kalledey and another by Goldstein which seem to have been due to a lack of ovarian secretion, whereby the hypophyseal secretion failed to be neutralized and flooded the general organism. Goldstein's case is that of a woman of 38, with a tendency towards gigantism in childhood. She was subjected to panhysterectomy for uterine myomata, and acromegaly developed without recognizable enlargement of the hypophysis. Kalledey's case is of even greater interest. The patient was 32 years of age and had shown acromegalic disturbances for four years. She menstruated first at 17, scantily, married at 22 and passed into menopause at 24, without gestation having occurred. At 28 ataxic symptoms appeared, with enlargement of the feet. She became very fat, developed headaches, sleeplessness, and vertigo, and later was unable to walk. Her general appearance was masculine, even to a growth of hair on the face. Intravenous injections of ovarian extract were administered and she became able to walk after the sixteenth dose. She was then given the extract in tablet form. Menstruation returned in three months and one month later she became pregnant.

#### OVARIAN GRAFTING

Determination as to the conditions under which the interstitial cells or the follicles predominate in influence will aid in explaining success or failure in ovarian grafting. All such efforts are as yet at the experimental stage, no recent work having brought forth any definite working knowledge. Indeed, opinion continues to be divided as to whether the ovarian hormone is in itself the essential factor in maintaining normal conditions or whether its value lies merely in its power to induce menstruation. Thus Tuffier regards menstrual suppression as the cause of trouble in post-operative menopause rather than the loss of the ovarian secretion *per se*, whereas Whitehouse regards his results from autoplasmic grafts after total hysterectomy as satisfactory. J. T. Smith believes the essential factor in the success

of the transplant is ovulation; that is, the production of a corpus luteum. Ovarian transplants containing lutein tissue acted almost as well in his series as where the nerve connection remained intact. Graves reports on 25 cases where the ovary was implanted in the broad ligament or abdominal wall, with end-results in 12; 7 suffered severely from hot flashes, 2 lightly, 3 not at all. One patient bled from the nose and rectum and twice the transplant became cystic and painful. In its present development Graves does not regard ovarian transplantation as of great practical value, an opinion concurred in by Bell and Park. Bell speaks of this procedure as an effort only towards mitigating menopausal disturbances, the severity of which depend not so much on ovarian insufficiency as on the correlation existing between all the internal secretions. Here the uterine changes which prevent menstruation and the individual variability as to sexuality and to the stability of and capacity for readjustment in the endocrinus system must be given proper consideration.

Tuffier's autografts comprise 44 cases. The ovary was implanted in the loose subperitoneal cellular tissue, one on each side, 5 or 6 cm. distant from the median incision. Even where the ovary was sclerocystic he used it. Of this series 19 were seen later, 18 of the patients having menstruated. Amenorrhoea ensued for from three to seven months after operation, during which time menopause symptoms were present. With the recurrence of menstruation the unfortunate phenomena leave, wherefore Tuffier argues that menstruation is more important for the physiologic equilibrium than is ovulation. Such argument is, of course, beside the mark until we can prove more definitely the nature of the relation between menstruation and the ovarian hormone.

Two of Tuffier's cases were of unusual interest: The grafts were removed after three and one-half years for pain. They had maintained their original size and a voluminous arterial and venous arrangement could be demonstrated about the periphery. Of 14 cases, however, but 3 menstruated regularly and rhythmically; 2 regularly but too freely, and 4 irregularly. Three showed a progressive decrease extending over a period of two years' time and four suffered from pain either in the graft or in the uterus. Tuffier concludes, therefore, that autotransplants are most effective in young women, especially if hyperthyroidism is present. The experiments of Curtis and Dick gave equally unsatisfactory results, but 2 autografts and 1 homotransplant proving successful out of 13 attempts.



Likewise in Carmichael's hands ovarian grafting has been disappointing, so much so that he considers the procedure as worth trying only in the hope that it may diminish the rapidity of onset of the climacteric. His original observations, published in 1907, have recently been reaffirmed by results obtained in two cases. In one of these the graft caused no trouble but menstruation ceased two months after the operation and mild climacteric symptoms supervened. In the other case menstrual flow appeared irregularly but the transplant caused such pain as to require its removal eight months later. The mass removed proved to be completely cystic, the cysts being surrounded by a dense fibrous capsule. Microscopically, no trace of healthy ovarian stroma or lutein tissue was to be seen. This ovary had been painful and was slightly cystic at the time it was transplanted.

Whitehouse feels somewhat more sanguine as to ovarian transplantation, but bases his opinion on a smaller series of cases. Like Bell, he employs seedling grafts but retains the entire ovarian structure, whereas Bell trimmed the cortex away, a procedure certain to minimize follicular development. The presence of a rich vascular supply in the tissues used as a bed for the graft is regarded as a prime essential by Whitehouse, as is asepticity and the avoidance of strong antiseptics. Nevertheless, he has implanted seedlings from ovaries involved in a general pelvic infection with favorable outcome, chronic inflammatory reaction thus not causing a destructive suppuration.

Experiments on sheep, as performed by Voronhoff and Jayle, seem to have led to encouraging results. Ovaries grafted from one animal to another later appeared normally developed, and in one case, where the transplant was intra-abdominal, pregnancy ensued. With respect to this particular phase of the work, the question naturally arises as to whether the host of the transplanted ovary possesses any power to influence the germ-plasm. Harms answers this negatively, basing his opinion on experiments with animals of low order. Voronhoff's failures resulted in those cases where the sheep were of different species and his best results followed where the two animals involved were of the same parent. Therefore consideration must be given to the quality of the blood of the receptor and of the donor, with particular reference to its power of hæmolysis and agglutination. Jayle's experience has extended over a period of fifteen years and he claims to have secured no permanent results, claiming that five years must elapse to determine such. He has invariably experienced

failure in grafting from one species to another. Not only should the two ewes come from the same mother, but from a herd having but one bellwether. He considers that the application to woman of the principles deduced from this experimental work would lead to a very limited field for the employment of ovarian transplantation; however, the danger of transmitting infection would prove a constant menace, if, indeed, the complex organism of the higher orders would be able to maintain so highly specialized an organ as the ovary when transplanted. It is one thing for a piece of engrafted tissue to live in a vascular bed and another for it to functionate as an organ of secretion.

#### THE THYROID SECRETION

The relation of the thyroid secretion to that of the ovary has always been of marked interest to the physiologist and to the clinician. Bell has pointed out that an excess of thyroid secretion is commonly met with in connection with pelvic lesions and that distinction must be made between cases which are the result of genital affections and those causing them. Total ovarian insufficiency arouses increased activity in most, if not in all, of the other ductless glands. Thus the thyroid is stimulated, just as after thyroidectomy the ovary increases in function, though the uterus may atrophy. After oöphorectomy the thyroid shows a great increase in colloid content. Further, underdevelopment of the ovary is not necessarily a primary factor in delayed puberty, though often a correlated condition. The thyroid and pituitary secretions, in association with the ovarian, are the factors most concerned in the final development of the genital apparatus. Thus at puberty delayed menstruation may be secondary to thyroid insufficiency just as menorrhagia may be temporarily due to hyperthyroidism, apart from exophthalmic goiter. Likewise sterility has accompanied hypothyroidism, a certain class of cases being evidently due to a disturbance of the hormone action of the thyroid on the ovary. Weil reports three such cases recently treated successfully. In one patient who was sterile for four years iodothylin tablets were given for three months, whereupon pregnancy occurred and went to full term. The same woman was similarly treated, and with equal success, on two subsequent occasions. In his second case, where sterility had obtained for seven years and where there was a slight goiter, pregnancy occurred after three months' treatment, but terminated spontaneously at the fourth month. In the third case the patient had been sterile for three years, and had a slightly



enlarged thyroid. Here again gestation came on after several months of thyroid feeding. In each case medication was stopped as soon as menstruation ceased.

This complementary association of the ovary and thyroid is again demonstrated in Basedow's disease. Graff and Novak's recent series of 36 cases and Fränkel's of 40 are significant. Of Graff and Novak's cases, a marked diminution in genital function was observed in 18, primary ovarian deficiency evident in 10, dysmenorrhœa in 6, sterility in 7, where pregnancy was possible. Four women showed definite infantilism and in 10 others stigmata of hypoplasia were present. No change in the genital function was seen in 12 patients, 1 became pregnant and grew worse and 2 recovered spontaneously in the second half of gestation. Fränkel found that in 8 of his cases the disease came on after the fortieth year, 6 after 50, and 5 during the menopause. Amenorrhœa was the rule in advanced disease. He regards the hypo-ovarianism of puberty, pregnancy, lactation, and the climacteric as peculiarly predisposing to *morbis Basedowii*.

Thompson thinks that it is the interstitial cell secretion, rather than that of the follicle, which has most influence on the thyroid, and he quotes Crile as having emphasized the relation between exophthalmic goiter and sexual neurasthenia. The thyroid becomes definitely hyperæmic and hypertrophic during pregnancy and its function is accordingly increased. Bell argues that such changes would naturally occur if the interstitial ovarian secretion were absent during gestation, thus throwing a tremendous strain on the other organs of internal secretion, especially the thyroid and hypophysis. This increased thyroid activity seems to take the form of a storage of colloid. On the other hand, neither metabolically nor actually has clinical experience or experimental research produced any conclusive evidence that thyroid insufficiency in pregnancy is the cause of eclampsia. On the contrary, hypo-ovarianism in gestation produces less effect in late pregnancy than in the non-pregnant, a condition due either to the stimulation of the inactive thyroid by gestation or to the secretion of the developing foetal thyroid being conveyed to the mother. As regards the etiology of eclampsia, indeed, most recent study seems to favor the idea that this lies in the metabolism of the placenta.

#### THE HYPOPHYSIS

No work on the physiology of the glands of internal secretion has created more interest than

that in connection with the hypophysis. By this time the physiologic action of pituitrin, as a stimulant of uterine contractions, and its therapeutic value in delayed labor or in obstetric hæmorrhage, are so well established that no consideration of this phase of the subject will be carried out at this time. It is desirable to include in this present résumé only such material as refers to the hypophysis in its relation to the ovarian secretion. Here again we find amenorrhœa a clinical expression when the pituitary gland is deficient. Hofstätter and Fromme have most recently contributed to this phase of the topic. In patients where amenorrhœa has existed for a long time without pregnancy, as in primary hypoplasia of the uterus or ovaries or in general infantilism, anæmia, and cachexia, a disturbance of the glands of internal secretion seems the most probable factor. While it does not necessarily follow that the hypophysis is insufficient in every case, it would appear that either such is the circumstance or else the addition of pituitary extract stimulates those glands which are at fault or which, under such stimulation, are able to improve conditions. At all events, Fromme treated 12 cases by daily injection of 1 ccm. of pituitrin: 5 proved negative, 2 doubtful, while 5 reacted promptly. His best results were obtained with those patients where adiposity co-existed, patients in whom disturbance in the internal secretions is most apt to occur. In some of Hofstätter's cases the amenorrhœa had not existed so long as in uterine atrophy of lactation and where mild adnexal disease seemed to be the only pathological finding. Thirty-three cases were treated by hypophyseal extract of which 22 responded after several injections by uterine bleeding very like menstruation. Continued injections or the use of tablets kept up the periods in 11 cases and even where amenorrhœa persisted the patients were symptomatically improved. This phenomenon was noted particularly in cases following castration and the menopause. Like Bell, Hofstätter has combined pituitrin with thyroid extract, especially in adiposity, and Bell has used it with ovarian extract also. A point of practical value clinically is the condition of the skin. Where this is dry and rough, the thyroid is most probably at fault, but if fine and smooth the pituitary is more apt to be insufficient.

Aschner and Seitz regard the hypophysis as absolutely necessary for the existence of pregnancy, and Bell claims never to have met with gestation in which the woman suffered from a major degree of pituitary insufficiency. While Bell insists on the unity of the whole gland,



Schlimpert and Siguret claim proof that the anterior lobe is uninfluenced by pregnancy and that the active secretion is obtained only from the posterior lobe, a conclusion which is certainly generally accepted. By its vasoconstrictor action Schlimpert has demonstrated pituitary presence in the foetal calf as early as the tenth week and in the human embryo at the sixth month. In foetal calves in the seventh month its influence on the respiratory center has been determined. But while hypophyseal insufficiency tends towards amenorrhoea and sterility, excessive secretion has a similar influence. Thus hyperpituitarism results in acromegaly, an expression of masculinity, hence decreased sexuality in the female which may be spasmodic or constant. Cushing has shown that acromegaly eventually produces dystrophia adiposo-genitalis, or pituitary insufficiency, hence again, amenorrhoea and sterility in the female.

That the relations between the hypophysis and the genitalia are in some respects antagonistic is claimed by Rössle. After castration this is not so evident where advanced age, cachexia, and similar factors enter in. Thus at the normal climacteric the hypophyseal influence does not become marked. But in young women he finds reaction evident in a very short time after removal of the ovaries or of the entire pelvic viscera, even in the presence of severe general disease. This is shown histologically by a hyperplasia of the eosinophile and especially of the basophilic cells. The latter appear abundantly in those areas of the hypophysis where normally but few are found. That such cellular increase is responsible for increased secretion, and hence for some part of the internal secretory disturbance characterizing the exaggerated symptoms of premature menopause, remains uncertain. That such may be the explanation, however, is suggested by Kleemann's experiments with castrated animals. After removal of the ovaries or testicles, or merely of the corpora lutea, he injected animals with extract of the hypophysis. The effect was the same in one series of animals as in a series of controls. When, however, the extract was taken from the hypophysis of a pregnant animal the effect differed materially. In some there was a dilating action on the vessels and in others a constricting effect, altogether contradictory. This may explain many of the failures reported in the therapeutic use of pituitary extract and it may also be construed as at least partially clearing up certain phases of the vasomotor disturbances at the climacteric.

The abnormally large excretion of calcium

salts as a result of hyperovarianism has led in past years to treating osteomalacia by oöphorectomy. Bossi has more recently suggested that these patients be fed suprarenal extract instead. While physiological osteomalacia has not been proven, bone metabolism is increased by the hypophysis, the thyroid, the thymus and probably the parathyroids. Further, it is quite possible that in osteomalacia there is a deficiency in these glands and in the adrenal as well as an excess of ovarian secretion. Thus we are face to face with a definite and logical therapeutic advance to be followed in the future in all those diseases of the endocrinous glands where there is excessive secretion. Instead of removing portions of diseased or deficient organs, Bell now suggests the use of metabolically antagonistic extracts. Pituitrin may prove to be as efficient in the treatment of hyperthyroidism as it is in uterine inertia in labor, and, combined with suprarenal extract, it may serve to counterbalance the action of the ovaries and thyroid, leading to calcium retention.

#### THE ADRENALS

The relation of the adrenal gland to the gonads is as yet very imperfectly understood. Addison's disease remains the only clinical recognition of suprarenal insufficiency, characterized in the female by amenorrhoea. Yet, as has been suggested, a similar expression may exist in osteomalacia. It is quite within the bounds of reason, therefore, to regard the suprarenals as of great importance during pregnancy in assisting the absorption and retention of lime. The amenorrhoea in Addison's disease is apparently due to uterine atrophy. Novak has recently shown a genital hypoplasia in rats following extirpation of the adrenals, more pronounced in younger than in older animals. Partial extirpation caused no change. Potency and capacity for conception was markedly decreased, though pregnancy was not necessarily interrupted. Seitz, on the contrary, considers that the adrenal is as essential for conception, pregnancy, and uterine contraction as is the pituitary, though an increased amount of adrenalin in the blood in pregnancy has not been demonstrated. In unilateral removal of the suprarenals in rabbits, Bell found that calcium secretion was increased many times, that of urea and phosphorus in less degree, with no histologic changes in the ovaries. The pituitary appeared to be affected in the rapid production of infundibulin.

In excess of suprarenal secretion amenorrhoea is a constant finding and pregnancy occurs in no well-defined case. In suprarenal cortical hyper-



plasia secondary sexual characteristics are always modified in some degree, a case of Benda's just reported being quite to the point. The ovarian influence is largely overthrown by such hyperplasia, secondary male characteristics being produced where the external genitalia remain those of the female. As a result of experiments with adrenalin on rabbits, Stepko came to the conclusion that the internal secretions from the ductless glands play a rôle in sex determination. After feeding a 1:1000 solution of adrenalin hydrochloride to the animals for eight days they showed a loss of 30 to 50 gm. in weight. The uterine horns were blue and atrophic and in the ovaries the germinal vesicles had lost chromatin. The urine contained albumin and gave a positive adrenalin reaction.

Since it acts in opposition to the oöphorins, Klein has employed adrenalin in treating that form of dysmenorrhœa in which the uterine mucosa becomes over-œdematous, a condition attributed to an excessive production of the oöphorins. Not only was the pain much lessened but the duration was considerably shortened. Again, in dysmenorrhœa, due to insufficient secretion of the ovary, adrenalin was combined with pituitrin, the former acting as a vasoconstrictor, the latter causing the uterus to contract, and thus coagulated blood could not collect. Results of this treatment were also very satisfactory.

#### THE PINEAL GLAND

The pineal gland responds to the influence of pregnancy similarly to the hypophysis. Aschner has shown that it becomes plumper and broader and that post-partum involution is never perfect. Further, after extirpation of the ovaries, atrophy takes place. This gland seems to be somewhat allied with the thymus in preventing sexual precocity, and Marburg, Fränkel and Hochwart have described cases of premature sexual development where tumors of the gland were demonstrable.

#### THE THYMUS AND PARATHYROIDS

The thymus, on the other hand, shows a marked atrophy during pregnancy, especially in the later months. The post-partum change here is marked, the gland undergoing an active proliferative process, leading in a short time to complete restoration. In the non-pregnant state the thymus, in association with the pancreas and parathyroids, is said by Caro to possess an action inhibitory to the thyroid but stimulating to the hypophysis. Other investigators, as Lampe, Liesegang, and Klose, find that this action rather

stimulates the thyroid, a conclusion to which Redlich is inclined to assent. Recent work on this phase of the subject is, however, too scanty to provide a basis for new conclusions.

Of the relation of the thymus gland to the general metabolism but little has been worked out. Whether it inhibits the development of the ovary or whether such development follows on the withdrawal of the thymus secretion is indefinite. Experimentally, it is increased after oöphorectomy, as is the pituitary gland before puberty. With the hypophysis it controls the growths of the body structures in general and with the pineal gland it probably prevents sexual precocity.

Ciullo has studied the parathyroids in pregnancy and concludes that they show no increased functional activity until the puerperium. Wasaglia produced tetany in dogs by extirpating the parathyroids almost completely just previous to pregnancy. Vassales had the same result where the extirpation took place during lactation. This does not prove, however, that parathyroid insufficiency is the only factor or even an essential one in tetany or eclampsia. After complete thyro-parathyroidectomy Werelius found that pregnant dogs died of tetany from five to ten days sooner than non-pregnant dogs. This investigator hoped to show that unborn pups would transmit to their mothers their own parathyroid secretion, thus proving that these glands functionate in intra-uterine life. In support of this theory his experiments were disappointing, the only conclusion accruing being that the removal in pregnancy of any organ possessing internal secretory activity would hasten symptoms ordinarily associated with such removal unless compensated for by vicarious organic function in the foetus.

#### THE MAMMARY GLAND

The relation between the mammary gland and the genital organs finds explanation in the influence of a hormone, according to the results of transplantation experiments by Cohn, who was unable, at the same time, to trace the origin of the hormone. No doubt has existed for many years as to the influence exerted by the ovary on the development of the breast, but this is not to be confused with the influence exerted on the mammary function. No definite research during the embryonal period as to the influence of the maternal ovary on the foetal breast has been undertaken. All that is known is the effect of castration on the breast. The uterus is of slight importance, since cases are in evidence of mammary and ovarian development where the uterus



was rudimentary or absent. Cramer implanted ovarian tissue from an osteomalacic woman and effected menstruation and the development of breast tissue. While not proven, it is most probable that the mammary changes of menstruation are due to the ovary. The breast changes of pregnancy, however, are very different. Starling, Biedl, and Foa have claimed that the hormone stimulating lactation takes origin in the foetus, while Halban shows that the death of the foetus does not prevent lactation, but that death of the placenta does. Hence Halban and Niklas argue in favor of a hormone from the chorionic epithelium, a theory which at present seems most tenable. Castration shortly after conception does not prevent breast changes or the secretion of milk. Cohn is not so certain of a specific action from the placenta and suggests that the increased mammary production during the puerperium is due to a non-specific lymphagogue activity.

On the other hand, such phenomena as milk secretion after castration, changes in the climacteric, or in case of purulent or neoplastic destruction of the ovaries, all point to an antagonism between the ovary and breast. The essential lymphagogue or leuco-stimulants depend on the ovary in so far as they become effective only after ovarian activity has ceased. Extirpation of the glands in guinea pigs had no influence on the length of pregnancy or labor, as reported by Schiffman and Vystavel, results coinciding with Scherbach's. The injection of mammary gland extract into animals not fully developed retarded the ovary or testicle in its complete growth. These indifferent results from experimental research may explain in part the none too satisfactory outcome following operative procedures, such as oöphorectomy in carcinoma of the breast and mammary amputation to limit ovarian activity in extreme cases.

#### THE DECIDUA AS A GLAND OF INTERNAL SECRETION

The study of the glands of internal secretion has led to many very interesting researches into allied problems. Of these one is a study of the foetal trophoblast from the point of view of cell physiology. This has been indicated with respect to the breast, from the work done by Halban and by Niklas. Young has gone further and suggested the theory that the chemistry of cell change in the embryonic chorion is responsible for the development of the decidua. Yet another idea is that expressed by Von der Heide, that labor is an anaphylactic reaction from foetal or placental hormones which are transmitted to the maternal

blood in excessive amounts at the end of gestation. Kolme has attempted to offset this theory in recent experimental work on guinea pigs. In his series labor was not influenced by the intravenous injection of relatively large doses of maternal pig serum collected just before and just after labor; nor by injection of serums from young pigs removed at term by abdominal section and immediately after normal birth; nor by placental extract and human placental serum. Kolme therefore regards Von der Heide's theory as not supported experimentally, and labor as not an anaphylactic process.

The tendency to regard any structure of perfect cellular construction as capable of producing an internal secretion had led Sfameni to express the opinion that active dilatation of the uterus is due not only to the influence of the corpus luteum but to that of the decidua as well. He saw a striking histologic affinity between the glands of internal secretion and the decidua. On this basis Gentili undertook a series of experiments to determine the presence or absence of some specific secretion. Human, bovine, and canine decidual extracts were extremely toxic when injected into rabbits. Decidual extracts from rabbits and guinea pigs were toxic in increasing degree when injected into animals of the same species. The physical signs and symptoms following injection were similar to those produced by intravenous injection of glands of internal secretion, as were post-mortem appearances. In some cases the toxicity was greater when the extract was taken in the early months of gestation. Decidual extract, further, shows a constant influence on the blood-pressure, lowering it rapidly, with a disturbance of the cardiac and respiratory rhythm. Gentili concludes that in the decidua there exists a substance which favors the intravital coagulability of blood and which may be neutralized by the serum of the blood of animals of the same species. Hence the decidua possesses sufficient of the characteristics of the endocrinal system to be regarded as a gland of internal secretion. It is to be hoped that further work with this particular structure will be undertaken.

With our present knowledge the entire endocrinal system can but be considered as a whole and the various internal secretions be studied together. With further clinical and experimental research, however, it may prove that more particular effort may be directed towards a certain organ in the hope that definite information may be secured. The subject is difficult and involved, yet enough acknowledged facts stand ready to-day to show that the question of the correlation of the

internal secretions has passed beyond the stage of mere theory. The treatment of many previously obscure conditions has been materially assisted by the work already done, yet this bespeaks only further work and a greater success in the future.

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# ABSTRACTS OF CURRENT LITERATURE

## GENERAL SURGERY

### SURGICAL TECHNIQUE

#### ANÆSTHETICS

**Boothby, W. M.:** The Determination of the Anæsthetic Tension of Ether Vapor in Man; with Some Theoretical Deductions Therefrom as to the Mode of Action of the Common Volatile Anæsthetics. *J. Pharmacol. Exp. Therap.*, 1914, v, 379.  
By Surg., Gynec. & Obst.

The term "anæsthetic tension" is employed to indicate the partial pressure of ether vapor that, after equilibrium is established, can maintain the subject in the stage of ideal surgical anæsthesia for an indefinite period. Curves are given showing that the anæsthetic tension of ether vapor for man is between 47 and 54 mm.—probably 51 mm.

A working hypothesis based on the theory of Meyer and Overton is suggested to explain the mode of action of the volatile inhalation anæsthetics which can be summarized in the quantitative reversible equation  $Mn + An = MnAn$ , in which the percentage saturation of the susceptible molecules in the nerve-cells (Mn), and, therefore, the inhibition of the cell function—the depth of anæsthesia, is dependent on the tension of the anæsthetic vapor (An) to which these susceptible molecules are exposed.

To harmonize the fact that large variations occur in the amount of ether required by the usual methods of anæsthesia with the fact that the same ether tension produces the same degree of anæsthesia in all patients, it is pointed out that the apparent variation can be accounted for by (1) changes in the volume of respiration; (2) changes in the rate of circulation; and (3) by a possible alteration in the rapidity with which the above reversible reaction takes place under a slightly different chemical environment.

**Flemming, A. L.:** A Review of Inquests Concerning Deaths During Anæsthesia. *Proc. Roy. Soc. Med.*, 1914, vii, Sect. Anæsthetics, 17.

By Surg., Gynec. & Obst.

The author gives a summary and analysis of 700 deaths from anæsthesia culled from the lay press accounts of coroners' inquests. The lack of scientific accuracy and completeness is to be regretted and also the fact that within the profession there is no adequate source of knowledge as to cases in which anæsthetics have any part in causing death. To illustrate, in only 542 of the 700 is the kind of anæsthetic mentioned. Indiscreet selection of the

anæsthetic is the first cause mentioned. Chloroform was used in many cases where it is now known to be relatively or absolutely contra-indicated. Formerly, most of the administrators were men of very limited experience who, perhaps, acted on the example of men of greater judgment rather than on thorough instruction and training, which brings forcibly to attention the question whether there is not some deficiency in the practical part of our teaching system.

The preponderance of chloroform is striking, 378 cases to 28, only, of ether, beside 100 of mixtures containing chloroform; indeed, it is inexplicable, considering the world's knowledge that ether is safer and should be the anæsthetic of choice. This fact is graphically shown in one of eight tables, which the article includes, on the anæsthetic used. The other tables are on the age of patient, sex, apparent cause of death, nature of operation, stage at which death occurred, complicating factors, and analysis of "embarrassed breathing."

The writer points out the emphasis, revealed by these facts, of asphyxia under chloroform, the prominence of tonsils and adenoids in embarrassed breathing, the sudden death in such cases even after operation (due to ventricular "fibrillation," from lightness of anæsthesia, or syncope, or asphyxia?) and he points out the difference between what he terms incomplete and light anæsthesia. As to ether as the anæsthetic, especially in cases of embarrassed breathing, he advocates it for induction, even where chloroform must follow. The anæsthetic was responsible for death in 521 of the 700 cases. Of deaths after the operation acidosis was alleged as the cause in only 7. In referring to the work of Levy on ventricular fibrillation under chloroform he points out the intermission and re-application of the anæsthetic, a practice we now know to be very reprehensible, though the many unskilled administrators seem slow to appreciate it. In anoci-association the choice of drug is shown to be important. chloroform and adrenalin with chloroform being dangerous.

The article is a most instructive one, barring the unscientific yet only source of information, and the writer deserves thanks for his painstaking compilation. Surgeons in general, and untrained administrators in particular, are too prone even in these enlightened days, to let anæsthesia be a matter of routine or unthinking application; and for lay

sources of statistics to show anæsthesia so hazardous does injustice to the best available work. The discussion centered around the inaccuracy of the lay information and the demand for professional records accessible for study—a matter those who have worked on anæsthetic mortality must appreciate.

**Gwathmey, J. T.: Oil-Ether Anæsthesia.** *N. Y. M. J.*, 1913, xcvi, 1101. By Surg., Gynec. & Obst.

Regarding the former use of carron oil for oil-ether anæsthesia the author states that it was used because it parted with ether in solution readily, but an error of a hospital pharmacist in compounding it with olive instead of linseed oil, thereby preventing proper mixing of the lime water, prompted the use of simple olive oil, which has continued, and he therefore uses 75 per cent of ether with 25 per cent of olive oil.

The advantages claimed for the method are: (1) Avoidance of apprehension caused by a face mask; (2) no expensive apparatus; (3) after-effects reduced to minimum; (4) complete relaxation (he claims "more than in any other known method"); (5) the limits of safety are widened, compared with other methods; (6) a more even plane of anæsthesia than by inhalation methods, unless in the hands of a skilled anæsthetist with perfected apparatus. These conclusions were based on about 100 cases in which this method was used, the ages ranging from 4 to 71 years, some with careful blood and urine and blood-pressure observations. The patients' choice of this method, after having had experience with other methods, is cited in argument.

Nine illustrative cases are cited. All but one—a girl of 9 years—received preliminary medication, usually morphine and atropine hypodermatically and chlorotone by rectum. In some a portion of the mixture had to be withdrawn for signs of overdose, cyanosis, stertor, or respiratory arrest. This suggests a peculiarity of oil-ether rectal anæsthesia, that respiration should be smooth and easy, without stertor, and with reflexes, especially lid-reflex, present. No deaths were properly charged to the anæsthetic, though one ensued within twenty-four hours from extensive organic disease. Care and good judgment must be exercised in the doses of preliminary medication and in the strength of the ether solution.

Physiological action is based upon the separation of the ether from the oil after its introduction, its absorption as a gas, circulation in the blood, passing through the lungs, where part is lost by exhalation, thence reaching the brain. The first symptom experienced by the patient is a loss of sensation in the lower extremities. Correspondingly, the return of sensation and pain follows that of consciousness. It is argued that a wide latitude of safety is proved by the recovery of one case of respiratory arrest for eight minutes; that it may be possible, by injecting a weak solution, to use this method for relief of pain, in place of morphine. Yet action depends on the

circulation of the ether through the brain; moreover, preliminary hypodermatics explain analgesia.

The indications for the use of the method are, especially, bronchoscopy, Grave's disease, other conditions of fear or need of "anoci-association," operations on or about the head, cases of previous nausea and vomiting. The contra-indications are the same as for ether, also colon and rectal inflammations. When a surgeon must work alone, or depend on a layman for help, instead of using the full strength it is best to substitute a weaker solution and add a supplementary anæsthetic by inhalation to avoid the possible need of withdrawing any.

The dose suggested for guidance is: For children under 6 years, a solution of 50 per cent; 6 to 12 years, 55 to 65 per cent—these without preliminary medication; 12 to 15 years, the same, with perhaps addition of morphine  $\frac{1}{12}$  gr. and atropine  $\frac{1}{200}$ ; from 15 years upward, 75 per cent with preliminary medication according to the individual case 30 minutes before operation, and with, usually, chlorotone 5 gr. in ether 2 dr. mixed with olive oil 2 dr. by rectum. The preparation of the patient includes irrigation of the colon, but not purging, and rest in bed for two hours. The technique is introduction of the oil-ether solution by funnel and catheter to 3 or 4 inches within the rectum, the patient in the Sims position, taking at least five minutes for eight ounces. After the operation, a pair of small rectal tubes are introduced and the colon irrigated with cold soapsuds, then about 2 to 4 oz. of olive oil, only, introduced for retention.

**Heyd, C. G.: Rectal Anæsthesia; Technique for the Induction of Oil-Ether (Colonic) Anæsthesia** (Gwathmey). *Post-Graduate*, 1914, xxix, 120.

By Surg., Gynec. & Obst.

Heyd reports 30 cases of colonic oil-ether anæsthesia from the New York Post-Graduate Hospital. The technique now used is as follows:

The preparation consists of a mild laxative the night before operation, but no purging; soapsuds enema in the morning; and saline irrigation of the colon three hours before operation.

The contra-indications are the same as for ether, though bronchitis, asthma, and illness from former ether by inhalation are not a hindrance. Diseases of the lower bowel; considerable distress by the patient on the introduction of the solution are contra-indications.

The apparatus consists of a small catheter and funnel for the oil-ether solution and two small tubes for withdrawing any of the solution from the rectum.

One hour before operation there is administered per rectum, chlorotone, gr. xx, ether and oil-ether, of each drams 2 to 4; one-half hour before operation an injection of morphine gr.  $\frac{1}{3}$ – $\frac{1}{4}$ , atropine gr.  $\frac{1}{200}$ – $\frac{1}{100}$  is given, hypodermatically. The mixture consists of olive oil 2 ounces, ether six ounces, or, for weak, anæmic adults, ether 55–65 per cent; oil, 45–35 per cent; for children, ether, 50



per cent in oil. With the patient in the Sims position, the catheter is inserted 4 inches and the solution injected, taking at least 5 minutes. The quantity used is 1 ounce to each 20 lbs. of body-weight. There should be a delay of 10 to 30 minutes before moving the patient.

The danger signals are loss of lid reflex; stertor, or embarrassed respiration; approaching cyanosis. When any of these are present, 2 to 3 oz. of the solution should be withdrawn from the rectum.

The post-operative treatment consists of immediate irrigation of the rectum with cold soapsuds; then, withdrawing one tube, 2 to 4 oz. of olive oil and a pint to a quart of cold water should be injected and the remaining tube withdrawn.

**Skilern, Jr., P. G.: On the Blocking of Infra-Orbital and Mental Nerves at Their Foramina to Induce Operative Anaesthesia in Their Cutaneous Distribution.** *Surg., Gynec. & Obst.*, 1914, xviii, 387. By Surg., Gynec. & Obst.

In certain operations upon the face, local anaesthesia by subdermal infiltration may be unfeasible because of the close relation at some places of cartilage or of bone to the surface, as well as of the disadvantage of working in tissues made oedematous by the injection. The distribution of the fifth nerve to well-defined territories and the emergence of some of the important branches from superficial foramina render nerve-blocking an ideal method of anaesthesia. The author describes the applied anatomical technique for the infra-orbital and the mental nerves.

The first patient presented upon the lower half of the right side of the nose, just above the ala, an indolent epithelioma — rodent ulcer — the size of a thumbnail. It was decided to desiccate the ulcer with the high-frequency spark. On account of the denseness of the tissues and the lateral cartilage forming the floor of the ulcer, infiltration was not feasible. Being in the territory presided over by the nasal branch of the infra-orbital nerve, the writer decided to block that nerve at its emergence from the infra-orbital canal. Using novocaine-adrenalin solution, the needle of the syringe was directed to the infra-orbital foramen 1 cm. below the lower margin of the orbit and midway between the canthi. Paræsthesia was obtained and the nerve blocked. The operation was painless.

In order to determine the feasibility of infiltrating the nerve throughout the infra-orbital canal, Skilern injected the latter with methylene blue in a cadaver and found that it traveled back to the sphenomaxillary fossa. He suggests this method for the relief of toothache and for painless extraction of teeth.

The second case had to do with blocking of the mental nerve to anaesthetize the lower lip for operation upon an epithelioma at its center. Both mental nerves were reached at their foramina. The technique is described in detail. Had there been cervical lymph-nodes to be removed, it would have

been feasible to have blocked the second cervical nerve at the middle of the posterior border of the sternomastoid muscle. The author points out that the dental branches to the incisor and the canine teeth may be blocked through the mental foramen, and since both nerves supply six teeth, genuine painless dentistry would be realized for nearly one-fifth of all the teeth, and at least for the most sensitive ones. Toothache in any of the six may be readily relieved.

#### SURGICAL INSTRUMENTS AND APPARATUS

**Quénu, E. and Mathieu, P.: Apparatus for the Treatment of Fractures of the Leg** (*Appareil pour le traitement des fractures de jambe*). *Presse méd.*, 1913, xxi, 981. By Journal de Chirurgie.

Quénu and Mathieu have modified Lambret's apparatus which consisted of two skewers transfixing the bone above and below the seat of the fracture, and in which reduction or shortening was produced by withdrawing the two skewers from each other along two rods lying parallel to the axis of the limb. They have modified both the skewers and the lateral rods.

Each skewer is a shaft of nickel-plated steel 25 cm. long, varying in diameter up to as much as 6 mm. One of its extremities ends in a bit 2 cm. long with fine threads; the other ends in a flattened head to be inserted into the auger.

Each rod is composed of two shafts, one of which screws into the other; the solid rod is a screw

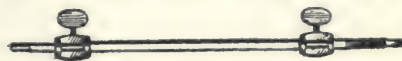


Fig. 1.



Fig. 2.

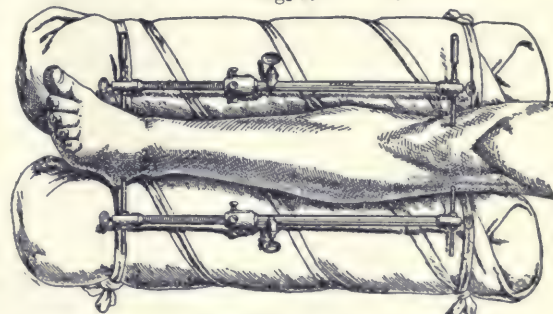


Fig. 3.

Fig. 1. (Quénu and Mathieu.) Skewer with slides to hold the hooks of the rods in place.

Fig. 2. (Quénu and Mathieu.) A, rod with bit to immobilize the solid shaft in the hollow shaft. B, small hook to facilitate the turning of the barrel screw.

Fig. 3. (Quénu and Mathieu.) Quénu and Mathieu's apparatus in position.

throughout its length with threads 2 mm. apart, and it is passed through the hollow shaft by a screw turning in a circular groove on the corresponding end of the hollow shaft. This screw is barrel-shaped and has four thumb-pieces which facilitate its turning. The terminal end of each rod has a hook into the opening of which the skewer fits.

The accessory pieces include a slide fixed to the

skewer by a pressure screw which holds the hook in position and prevents its being displaced inward or outward and a little guard which is screwed onto each pointed end of the skewers after the apparatus is in place.

For the technique of application of the apparatus the reader is referred to the original article.

J. DUMONT.

## SURGERY OF THE HEAD AND NECK

### HEAD

**Frank, L.: Epilepsy Surgically Considered; a Preliminary Clinical Report.** *Am. J. Surg.*, 1914, xxviii, 113.

By Surg., Gynec. & Obst.

The author divides epilepsy into the two classical types: (1) the so-called idiopathic, essential or genuine; and (2) the secondary, Jacksonian or traumatic. Nearly all medical men agree that the proper course of treatment of a secondary epilepsy is operative. However, the more we know about epilepsy, the more we are inclined to ascribe some definite cause for its onset and the more cases are considered subjects for surgical treatment. Up to the present the only successful treatment has been surgical, and the author makes a plea for operative interference when there is a possibility that the focus of the trouble can thus be reached.

The method which the author usually follows is a two-step operation. At the first sitting the cranium is opened, and at the second, eight to ten days later, the dura is opened and exploration of the brain carried out. In a case which the author reports, such an operation was performed and the motor areas for the arm center, the part mainly affected, was excised 6 mm. deep. Following the operation the patient made a gradual but steady recovery.

J. H. SKILES.

**Kerrison, P. D.: Barany's Theory of Cerebellar Localization: Diagnostic Value of the Pointing Test in Cerebellar Abscess.** *Laryngoscope*, 1914, xxiv, 192.

By Surg., Gynec. & Obst.

In the diagnosis of cerebellar abscess without focal symptoms the application of the pointing tests is of value, but before these can be applied a knowledge of the normal pointing reactions is necessary. By this is meant the departure from the normal pointing accuracy which regularly occurs in response to vestibular irritation. Normally, with eyes closed and having located some fixed object by the sense of touch, the patient lowers the arm and again brings the finger into contact with the object. Then if the right ear is irrigated with cold water a rotary nystagmus to the left develops and the individual tends to fall to the right. If the pointing accuracy is quickly tested it will be found that the hand, in being lowered, will deviate from the vertical plane to the right and on being raised will swerve still further to the right, describing a V

to the right of the object. Stated as a rule, the pointing deviation resulting from vestibular irritation is invariably in the direction opposite to that of the induced nystagmus; it therefore corresponds with the direction of the falling tendency.

In suspected cerebellar disease the loss of pointing accuracy in both hands should be tested. If the symptom is present, it will be found that the arm corresponding to the cerebellar lesion will regularly deviate outward, while the opposite hand will continue to point with normal accuracy. This result should then be corroborated by testing the reaction to vestibular irritation, when it will be found that in the presence of an induced nystagmus the affected arm does not deviate in the opposite direction to the nystagmus but continues to deviate outward while the other arm deviates in the opposite direction. In a case reported by Barany in which these reactions were perfectly illustrated, following evacuation of the right cerebellar abscess, the normal pointing accuracy of both arms became normal, but on testing the reaction to vestibular irritation the left arm deviated to the left while the right arm continued to point with normal accuracy.

Barany believes that there are separate centers in the cerebellar cortex, a pull or tonus upon some particular joint or its controlling muscle groups. The effect of any lesion functionally suppressing any one of these centers is equivalent to stimulating the opposing center and thus the spontaneous deviations from normal accuracy resulting from cerebellar lesions are to be considered wholly the result of cerebellar enervation. As yet we have definite information of only a few important centers, that center exerting inward tonus upon the wrist and shoulder being located in the middle inferior lobe near the flocculus. These are the most important from the standpoint of diagnosis as they are the centers most commonly involved in otitic cerebellar abscess.

Barany's theory of the cause of the above phenomena is as follows: The spontaneous outward pointing deviation which occurs as an occasional focal symptom of cerebellar abscess or tumor is caused by pressure upon the center involved. In the case of the wrist or shoulder the inward tonus being for the time abolished, the hand or arm in pointing is dominated by the still intact center for outward tonus and therefore deviates outward. When the abscess is evacuated, the pressure is relieved and



the center regains in part its control of position sense in the joint involved. This partial restoration of functional activity is probably reinforced by the balancing of activity in the opposing center for outward tonus, and, reasoning by analogy, it is also possible that the cerebrum may play some part in the correct arm movements in the vertical plane.

E. K. ARMSTRONG.

**Axhausen, G.: Brain Puncture** (Die Hirnpunktion). *Ergebn. d. Chir. u. Orthop.*, 1913, vii, 330.  
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

A series of questions which the author addressed to the large hospitals showed that internists and neurologists, and even surgeons, were opposed to puncture of the ventricles. It was the aim of the author in his monograph to overcome this opposition. After a short introduction he discusses the technique in detail; the diagnostic value of the procedure depends on a thorough knowledge of it and following it carefully in all the details. The different modifications are discussed critically, and the comparative value of the different instruments used.

The author believes that puncture should be performed only when it is possible to follow it up immediately by trephining if necessary, therefore it should be done only in the operating room, for in some cases of abscess and hæmorrhage it is necessary to trephine at once. Its greatest diagnostic value is in the local diagnosis of intracranial hæmorrhage; for by no means all of these cases are typical, especially where there is also concussion or contusion of the brain or fracture of the skull. The same thing is true in traumatic oedema. It makes the diagnosis of abscess easier and the author believes the danger of spreading the infection is greatly exaggerated.

Puncture should be practiced only with great caution in brain tumor, for small hæmorrhages from the finer blood-vessels, which cannot always be avoided, may cause threatening general pressure symptoms. In the diagnosis of hydrocephalus internus it is equal to lumbar puncture.

The author is much more restrained in his discussion of the therapeutic effects except in hæmorrhage. In severe supradural hæmorrhage it can be used as a palliative treatment in order to gain time for operation. In subdural effusions it often suffices of itself to avoid the after-effects. COSTE.

## NECK

**Caldwell, C. E.: Congenital Tumors of the Neck.** *Lancet-Clm.*, 1914, cxi, 364.

By Surg., Gynec. & Obst.

The author discusses the embryology of tumors of congenital origin, comes to the conclusion that the evidence adduced goes to prove that the lymphatic cavities described by Veau and the jugular sacs described by Sabin are but different interpretations of the histological facts, and that in these lymphatic cavities—or perhaps more accurately

speaking, jugular sacs—we have the foetal anlagen which result by arrested evolution in the multilocular serous cysts, the nature and disposition of which correspond most accurately with that of these sacs. The absence of a true endothelial investment of these sacs or cysts may be explained on the theory of atrophy from intracystic pressure.

The author offers the following classification of congenital tumors of the neck:

Location—Median—From thyroglossal duct; from accessory thyroid rests.

Lateral—Branchiogenic cysts; multilocular serous cysts; teratomata; branchiogenic carcinoma (Volkman); carotid body tumors.

Consistency—Solid—Teratomata; branchiogenic carcinoma; carotid body tumors.

Cystic—Branchiogenic: Ectodermic-dermoid, entodermic-mucoid, entoectodermic-mucodermoid. Serous cysts or mesodermic: Multilocular cysts, hygroma colli, hydrocele colli, cystic lymphangioma, lymphocele.

The case is reported of a boy 8 years of age, who for three years had had a tumor which had been aspirated several times but had always returned. The tumor was located on the right side of the neck and extended from the mastoid and external auditory meatus down to a finger's breadth from the clavicle at the junction of its middle and inner thirds, and from almost the median line, posteriorly, to the middle of the right inferior maxilla in front. The tumor was not tender and seemed to fluctuate throughout. The aspirated fluid was straw-colored and boiled starch solution treated with tincture of iodine was decolorized by it. The tumor was removed by an incision through the skin over the border of the mandible. It was found to be a multilocular serous cyst, a lymphocele.

EDWARD L. CORNELL.

**Iversen, T.: The Parathyroid Glands in Goiter and Basedow's Disease** (Les glandes parathyroïdes dans le goitre et la maladie de Basedow). *Arch. internat. de chir.*, 1913, vi, 154.

By Journal de Chirurgie.

The parathyroid glands are independent organs having a special and necessary function. In the normal state there are two parathyroids on each side in 81 per cent of the cases, in 9 per cent of the cases 3, and in others 5. The dimensions are on an average 6 x 4 x 2 millimeters. They are located along the posterior border of the thyroid gland and are in relation with the branches of the inferior thyroid artery and the recurrent laryngeal nerve. The location of the right recurrent nerve is somewhat different from that described by the classics. It is more apt to be injured in operations for goiter than the left recurrent.

Among 25 cases of goiter, 22 of the specimens being from the cadaver and 3 of them from operation, the author found four parathyroid glands in 14 cases, or 56 per cent, 3 in 9 cases, 36 per cent, 1 in one case, and 5 in one case.

In goiter the upper parathyroids keep their normal position; the lower ones are displaced downward by the growth of the thyroid. Their size is practically the same as in the normal condition. Sometimes, however, there is an increase in length and breadth with a decrease in thickness. There is no change evident in the microscopic structure. In some specimens from operation there have been recent hæmorrhages.

In 5 cases of Basedow's disease he found 4 parathyroids four times and 2 once. The size and location of the parathyroids are the same as in goiter. The histological structure does not show any constant change. In particular the number of fat-cells in the interstitial connective tissue is not always, increased. Here, too, specimens from operation often showed recent hæmorrhages.

In man as in animals the total removal of the parathyroid glands causes fatal tetany. It is a question whether leaving one parathyroid suffices to prevent tetany, but it is certain that if two glands are left it does not occur. In some cases the tetany is chronic and trophic disturbances predominate.

Pregnancy and labor increase the sensitiveness to parathyroid insufficiency, a point which should be remembered in operations for goiter on women. The author found parathyroids in the specimens which he examined in more than half the cases of extirpation and resection, and in some cases of enucleation of goiters. He only found them rarely in cases of enucleation-resection.

The best operation for sparing the parathyroids and avoiding tetany is a slight modification of Kocher's enucleation-resection. The operation should be subcapsular. A layer of thyroid tissue 4 cm. broad should be left in front of the recurrent nerve. The large branches of the inferior thyroid artery should be avoided and the small branches ligated at their entrance into the thyroid gland. The veins also should be ligated as near as possible to the thyroid. There is no known treatment for chronic tetany. Recent experience in the transplantation of thyroids has shown that only autotransplantation gives any results, while in homoplastic transplantation the graft disappears or loses its function.

CHIFOLIAU.

## SURGERY OF THE CHEST

### CHEST WALL AND BREAST

**Judd, E. S.: End-Results in Operations for Cancer of the Breast.** *Surg., Gynec. & Obst.*, 1914, xviii, 289. By Surg., Gynec. & Obst.

Judd presents a review of the results of operations for mammary cancer in the Mayo clinic from January 1, 1902, to January 1, 1912. This covers 608 cases, of whom it was possible to trace the subsequent histories in 514. In all the patients the operations were radical and consisted in the removal of the entire breast, axillary glands, and fascia including the pectoralis major and minor muscles, usually all in one piece. The diagnoses in all of the cases were made from both macroscopic and microscopic evidence. Of the 608 patients, 2 were males, one of whom is alive without recurrence 3 years after the operation, and the other died at the end of 2 years and 8 months from recurrence.

The youngest patient was 25 years of age and the oldest 85 years of age. By decades their distribution was as follows:

20 to 30 years of age.....	13
30 to 40 years of age.....	147
40 to 50 years of age.....	228
50 to 60 years of age.....	147
60 to 70 years of age.....	88
70 to 80 years of age.....	27
80 to 90 years of age.....	1

Of the 13 patients under 30 years of age, 5 are alive and well without recurrence. Of the 514 patients of whom the subsequent history is known, 266, or 52 per cent, are known to be dead, though

21 of these died from other causes without clinical signs of recurrence of carcinoma, leaving a balance of 48 per cent of deaths, probably from cancer, for the entire series. Of the 514 patients, 248 are known to have lived from 2 years to 11 years and 4 months; 37 of these are known to have recurrences.

Of the patients operated on during the years 1902 and 1903, 40 have been traced; 27 are known to be dead from various causes, leaving a percentage of 33 alive without recurrence more than 10 years. Three of those who died lived more than 6 years and died from other causes.

Of the 321 patients operated on more than 5 years, 266 were traced: 148 are known to be dead and 106 living, a percentage of 40 who have lived more than 5 years. Six of the living have recurrences at present. Fourteen of those dead have died from other causes than cancer.

Of the 510 patients operated on more than 3 years ago, 437 have been traced: 234 are dead, 191 living, a percentage of 45 of patients living more than 3 years. Twenty-seven of these have recurrences at present. Nineteen of those dead have died from other causes.

One case is reported of a patient who died 9 years and one month after the primary operation from general carcinosis; one from internal metastases without local recurrence 6 years and 5 months after operation; and one on whom a secondary operation for recurrence was done 12 years after the primary operation. In this latter case the patient remained well nearly 3 years after the secondary operation.



While noting the importance of an immediate radical operation after a diagnosis of carcinoma from a test specimen, Judd notes that the delay in such procedure does not always necessarily mean a bad prognosis.

Conversely, he notes that patients in whom there is a very small mammary lesion without determinable glandular involvement may die of early internal metastases. He notes that while œdema of the tissues is usually a contra-indication for operation, one patient in his series, in whom the prognosis was bad because of œdema and yet who was operated on as a palliative measure, is still alive without recurrence 5 years and 3 months later.

Judd notes that cancer in the lactating breast has usually been rapidly fatal. A very large percentage of the patients heard from have reported that functionally their arms are practically as good as ever. Judd notes that when it has been necessary to destroy one of the motor nerves the function of the arm is much more apt to be impaired. Not over 5 per cent of the cases have had swelling of the arm. His conclusions are as follows:

1. Results in operations for cancer of the breast are as good if not better than results in operations for cancer elsewhere.

2. The prognosis in younger people who received the benefit of an early operation was better than had been expected.

3. The prognosis is variable in a certain per cent. An extensive external involvement may give a fair prognosis while a slight external lesion may terminate early from internal metastasis.

4. That metastasis may occur many years after the operation, though in the great majority of instances it will appear in the first few years if at all. The difference between the percentage of patients living over 3 to 5 and 10 years is not as great as might be expected, but this is because most patients who die of the disease die within the first 3, or at least the first 5 years. Living 5 years without recurrence means a very small probability of trouble after that.

5. Comparing these results with those of former years, we feel that the results are improving and that the improvement seems due to the fact that patients are coming earlier for treatment rather than to any improvement or change in the technique.

MacCarty, W. C.: *Clinical Suggestions Based upon a Study of Primary, Secondary (Carcinoma?), and Tertiary or Migratory (Carcinoma) Epithelial Hyperplasia in the Breast.* *Surg., Gynec., & Obst.*, 1914, xviii, 284.

By Surg., Gynec. & Obst.

The mammary acinus consists of two rows of epithelial cells when the differentiated cells (inner row) and the undifferentiated cells (outer row) are present, the histologic picture may be spoken of as primary epithelial hyperplasia. When the differentiated cells are absent, and there remain only the hyperplastic undifferentiated cells of the

outer row, the condition may be referred to as secondary epithelial hyperplasia. When the line of demarcation between the hyperplastic undifferentiated cells and the stroma is indefinite or absent, and the epithelial cells appear in the periacinar stroma, the condition may be spoken of as tertiary or migratory epithelial hyperplasia.

At present, surgeons have no very definite method or standard of dealing with the doubtful group. Radical operations are sometimes done when they are not needed, simply because the surgeon gives the patient the benefit of the doubt. The writer has occasionally seen carcinomata excised for benign tumors.

It seems that there should be a mean between the two extreme conditions, and this mean should, with the aid of a knowledge of the stages of epithelial hyperplasia, serve to scientifically solve the following problems:

1. The percentage of cases of tertiary hyperplasia with or without glandular involvement which may be cured after an arbitrary period of ten years from the time of radical operation.

2. The percentage of cases of secondary hyperplasia which will remain well or recur after the removal of the mammary gland itself without the removal of the glands, muscles, and large amounts of skin.

3. The percentage of cases with local chronic mastitides or encapsulated conditions which return later with secondary or tertiary hyperplasia after local removal.

The question for the surgeon to decide is whether or not he is willing to run the chance of local recurrence after wide local removal of a malignant condition followed by an extensive operation after microscopic examination, or take the credit of doing radical operation unnecessarily in an attempt toward conservatism. This, with our present knowledge, can be answered only by conscience, and not by scientific data. The following plan suggests itself:

1. The conditions which are associated with classical clinical signs of carcinoma should be treated radically.

2. The doubtful cases in women near or over 35 years of age should have the entire mammary gland removed for immediate examination. If primary or secondary hyperplasia be present, nothing more should be done; if tertiary hyperplasia be present, a radical operation should be performed.

3. In doubtful patients near or under 35 years of age, a wide section of the mammary gland including the pathological conditions should be removed for examination. If primary hyperplasia be present, nothing more should be done. If secondary hyperplasia be present, the rest of the mammary gland should be removed; and if tertiary hyperplasia be present, the radical operation should be accomplished.

This plan avoids incision of tumors and removes the possibility of unnecessary radical operations.

**Clarkson, F. A.: Primary Endothelioma of the Pleura.** *Canad. M. Ass. J.*, 1914, iv, 192.

By Surg., Gynec. & Obst.

The author reports the following case in detail. A short discussion also accompanies the case history.

A young Englishman, 27 years old, applied for insurance, but was declined. His family history was good, but his physician found dullness as high as the sixth rib, with absence of breath sounds in the same region. A month later, the dullness reached the clavicle, and aspiration removed 80 oz. of straw-colored fluid which contained no cellular elements, and was negative on culture and inoculation. Five weeks later, the fluid re-accumulated in sufficient quantity to cause dyspnoea, and a second aspiration drew off another 80 oz. At the third operation, three weeks later, some blood was noted in the aspirated fluid.

The patient complained of no pain—in fact, throughout the whole illness, the absence of pain was a most striking feature. A slight cough gave enough sputum for examination, but no tubercle bacilli were found. Calmette's reaction and, later, Morro's were both negative. Up to this point in the disease, there had been no fever, the only subjective symptoms being slight dyspnoea on exertion, and progressive weakness. The patient lost weight rapidly.

Examination showed deficient movement over the whole right side of the thorax. Vocal fremitus and resonance were absent. Percussion note was dull as high as the second rib, and above that Skodaic resonance. Below the fourth rib, no breath sounds were heard; above, breathing was distant bronchial, with coarse râles at the end of inspiration. The left chest was hyper-resonant, and the breath sounds were puerile. The apex beat was in the fifth interspace, one-half inch outside the mammillary line. The sounds were normal. Posteriorly, Grocco's triangle could be marked out on the left side. The liver was at the umbilicus. The spleen was not palpable. Urine: s.g. 1.018, no sugar or albumin. Blood: reds, 3,500,000; whites, 10,000.

Portions of the sixth and seventh ribs were resected in the anterior axillary line. A large quantity of blood-stained fluid escaped and the pleural cavity was lined with innumerable fibrin nodules. A large-sized drainage tube was introduced, from which fluid was constantly discharged, at first sanguineous, but towards the end, greenish. The patient gradually grew weaker, became remarkably emaciated, and died about six months after the symptoms appeared.

At autopsy the right pleura was found to be thickened (5 mm.) and firmly adherent to the ribs and sternum. When this was divided, a large ragged cavity was disclosed, with many rounded tags attached to the walls (from 1 to 4 cm. in diameter) as well as numerous stringy masses, more or less firmly connected with the pleura. The right lung was collapsed and airless, but contained no new-

growth. The visceral pleura covering it was of the same nature as the parietal—thickened and covered with pedunculated tags. The only portion of the pleura which could be separated at all easily was that part close to the anterior mediastinum. On dissecting off the pleura, the new-growth was found to be of about the same homogeneous color and consistency as a fresh-cut section of testicle. Very friable, and thicker in some portions than others, the neoplasm seemed to be confined almost entirely to the inner surface of the pleura. Only in one place was there a definite nodule on the outer surface.

Besides a dilated stomach and a slightly enlarged spleen, all the other organs were in a normal and healthy condition.

Microscopical examination of sections of the thickened pleura showed the new-growth to be an endothelioma. The pedunculated tags were almost entirely fibrin. At no place could there be found evidence of the invasion of the new-growth into the surrounding tissue, the line of demarcation between the lung and pleura being always clear and well-defined.

## TRACHEA AND LUNGS

**Godlee, R. L.: Foreign Bodies in the Air-Passages.**

*Clinical J.*, 1914, xliii, 177.

By Surg., Gynec. & Obst.

The question of foreign bodies in the air-passages is of great importance to all, but particularly to the general practitioner upon whom rests the responsibility of an early diagnosis. The bronchoscope is not a difficult instrument to use when one has become accustomed to it. Stereoscopic skiagrams are strongly urged and it is essential that they be taken instantaneously in order to elude the heart movements and to eliminate shadows due to glands, inflammatory products, and vessels. The presence of a foreign body may give rise to very few symptoms, though the prolonged or even short residence in a bronchus commonly gives rise to chronic bronchitis and bronchiectasis. The bronchi beyond the obstruction are never cleared of secretion, which then becomes septic. The author's long experience has convinced him that it is more common for the patient to forget the incident which led to the presence of the foreign body than to invent a tale.

The most important point of distinction of foreign bodies is whether they are or are not septic in their own right. Another interesting distinction is in regard to those bodies which stay wherever they happen to stop and those which at once start on their migrations, the constant and forcible movement occurring with every inspiration being responsible for the latter.

The effects of the lodgment of foreign bodies in the air-passages vary with the character of the offending body and the point of lodgment. A large piece of meat or some other similar soft body,



if impacted in the trachea, quickly causes death. A solid body that completely obstructs a main bronchus causes the whole lung to collapse and septic disintegration follows. A smooth solid body first sets up bronchiectasis in the part from which the involved bronchi come but the process may gradually extend to the whole base, first of the affected lung and then of the other. These cases are very liable to pneumonias, hæmorrhages, or amyloid disease and may at any time terminate in cerebral abscess. If the foreign body is putrid at the time or is one that can decompose, the lung changes are much more acute, a definite abscess often forming. This class includes pieces of bone, fragments of teeth, and smaller particles easily set free in operations around the mouth and nasopharynx. It is not uncommon for these cases if unrelieved to end in pulmonary tuberculosis.

Formerly the accepted treatment was a tracheotomy through which various forms of catchers or forceps were used. The invention of a straight bronchoscope has revolutionized the treatment and it is now possible to introduce straight tubes into the secondary and even the smaller bronchi. If it is found impossible to remove the foreign body with the bronchoscope passed through the glottis, it is advisable to do a low tracheotomy and introduce the bronchoscope through the wound. Intrathoracic bronchotomy, though difficult and dangerous, has at times proved successful when simpler methods have failed. Occasionally it may be advisable to open the pleura and feel the lung, if the body has passed into its substance. It is a much simpler procedure if one of the methods of securing ultimate inflation of the lungs is at hand. If the body is felt, the lung must be fixed to the chest wall, then incised and the foreign body extracted.

E. K. ARMSTRONG

**Benninghoff, G. E.: Traumatic Rupture of the Lung without Penetrating Wounds of the Thorax, with Citation of One Case.** *Internat. J. Surg.*, 1914, xxvii, 46. By Surg., Gynec. & Obst.

The author discusses the well-recognized methods of treating such cases and thinks that while one case is too limited to accept as anything positive, yet when the outcome is so gratifyingly unlike that of the regularly accepted plan, credit should be given to the different method. The case follows:

A boy, aged 13, was taken into the Bradford Hospital, fifteen minutes after receiving a severe injury by the ends of the shaft or thill of a wagon striking him over the upper part and front of the thorax. He was very pale; pulse small and 72; respiration 24 and very shallow; temperature 96.5°. Examination of the chest showed a deep depression of the chest wall, midway between the nipple and shoulder. At each respiration the skin in and about the depression rose and fell. Air crepitations were present beneath the skin of the face, chest, and side of the abdomen. In the few minutes taken to exam-

ine him the pulse grew feeble and cyanosis began to show about the face, neck, and hands. The diagnosis of traumatic rupture of the lung was easily made, also that he was fast succumbing to hæmorrhage within the pleural cavity.

The patient was operated at once under chloroform anæsthesia. A U-shaped incision was made, beginning over the second rib, two inches external to the right border of the sternum, extending downward six inches, curving outward and upward, and terminating just internal to the head of the humerus. The skin flap was dissected up, uncovering the pectoral muscles as far as the second rib. When the depression was uncovered, blood and air escaped in large quantities. Intravenous transfusion of physiological salt solution was begun simultaneously with the operation. The ribs had been simply depressed and spread apart. The second and third cartilages were separated with the knife, turned outward over the right shoulder and held there by an assistant. An enormous amount of blood-clots was removed from the cavity. The lung was withdrawn and the laceration was found extending transversely across the middle lobe. Blood was pouring from it in a continuous dark stream. The first suture placed at the extreme inner angle of the laceration completely controlled the hæmorrhage. Four other sutures were placed and tied, and after deflating the lung by gentle manual pressure, it was returned into position. The respirations were now 40 per minute, but the patient had a good color and the pulse was 120; 24 ounces of salt solution had been infused. The ribs were replaced, the divided ends sutured, and the muscles replaced and sutured together. A large flanged rubber tube was inserted through the front of the chest wall in the third intercostal space between the sternum and the anterior axillary line, and the skin sutured tightly around the tube. The entire operative field was covered with many layers of gauze, a bandage loosely applied, and the patient returned to bed.

The entire operation was completed in thirty minutes. At that time cyanosis had disappeared, respiration was full and without effort and about 40 per minute. The reaction was somewhat severe but no dangerous symptoms occurred. The temperature twenty-four hours after operation was 103, which was the highest point reached during convalescence. The dressings were lifted off the tube on the third day when serum was seen draining through the tube. Percussion and auscultation revealed complete flatness of the chest; the lung was functionless. The tube was removed and the tissues fell together, completely closing the opening into the pleural cavity. The lung began to inflate about the tenth day when percussion indicated beginning absorption of the fluids within the pleural cavity. Less than five months after the injury, the lung was functioning perfectly, except possibly a limited portion in the locality of the lacerated lung tissue and the physical condition of the patient was perfect.

EDWARD L. CORNELL.



**Beckman, E. H.: Decortication of the Lung for Old Empyema.** *Northwest Med.*, 1914, vi, 68.  
By Surg., Gynec. & Obst.

The pathology of empyema shows that as soon as there is an accumulation of purulent material within the pleural cavity, either local or general, nature regards it the same as an abscess in any other part of the body and attempts to limit absorption by walling it off.

In operating on some of the late cases, this limiting membrane has often been found to be from one-half to nearly one inch in thickness. As the fluid accumulates in the pleural cavity, the unyielding wall of the thorax prevents expansion in this direction, and room is found for the accumulation by compression of the lung. If the empyema has continued for any considerable length of time, this membrane is so resistant that the lung cannot re-expand after the fluid has been allowed to escape by free incision.

It is evident, then, that if free drainage is established before these adhesions form or before they become firm enough to hold the lung in a state of collapse, the lung would quickly obliterate the cavity and the patient be restored to health rapidly. This corresponds exactly to the results obtained with free drainage in the early cases.

It should be remembered that empyema is not a disease of the lung, although pulmonary disease and empyema may exist at the same time, and that the pulmonary tissue is only slightly or not at all involved in the inflammatory process in a very large majority of the cases. In the recognition of small empyemas the relationship between pneumonia, other infections, and this secondary infection must be remembered and a watch kept if the development of the general phenomena of infection occurs or persists after the pneumonic or other infectious process has apparently subsided. Pain continuing after the crisis in pneumonia in a certain localized area, although it may not be severe and accompanied by a septic temperature, almost surely indicates a localized empyema. The localization of the pus can often be determined by the pain and localized tenderness on the wall of the chest.

The aspirating needle is often of the utmost service in arriving at a correct diagnosis in these cases. While warnings are given by many writers of the dangers that may occur from introducing a needle into the pleural cavity, the author believes that the gain from its use in the matter of arriving at an early diagnosis is greater than the danger that may result from a late recognition of empyema.

A radiogram of the chest is of great value in arriving at a correct diagnosis in obscure cases, although it is often an extremely difficult and sometimes an impossible task to determine what the picture shows. It must be kept in mind that the X-ray picture is the reproduction of a shadow and that a thickened pleura may cast as dense a shadow as an accumulation of fluid.

## HEART AND VASCULAR SYSTEM

**Blechnann, G.: Clinical and Therapeutic Study of Pericardial Effusion; Marfan's Epigastric Puncture** (Les épanchements du péricarde. Étude clinique et thérapeutique. La ponction épigastrique de Marfan). *Thèses de doct.*, Par., 1913.  
By Journal de Chirurgie.

Blechnann's work is based on about 500 cases, most of them his own, in the hospitals of London. He shows the frequency with which pericarditis with effusion is undiagnosed, for among 4,892 autopsies, fluid was found in the pericardium 133 times. Almost half the cases are found in individuals less than 15 years old, and more than half of the cases in children are in those less than 5 years of age. He reviews the symptoms described by the classics and finds that most of them are inexact or inconstant.

As to treatment he maintains that the usual method of puncturing the pericardium results in puncturing the pleura or the heart. He believes that Marfan's method is the most rational, the simplest and safest method of puncture. A small trocar or needle for lumbar puncture is passed in immediately below the xiphoid cartilage in the median line. It is directed obliquely from below upward, passing for 2 cm. along the posterior surface of the sternum. It is then directed somewhat obliquely backward, passing into the gap in the sternal insertion of the diaphragm, entering the pericardium at its base. With this method he has been able easily to puncture the same patient 17 times.

Pericardotomy is discussed and the author decides that Larrey's method is the best. In this method a left subchondrocostal incision gives easy access to the pericardium by the epigastric route, especially in children. It produces a minimum degree of traumatism. It does not involve the pleura and it assures perfect drainage at the lowest point—the only way that is really rational.

The operative indications in pericardial effusions are given as follows: Serous effusion, acute infectious, toxic or mechanical, puncture; tubercular, puncture or pericardotomy without drainage; hæmorrhagic, puncture; purulent, pericardotomy with drainage.

The life of the patient depends on early operation. It is better to operate too early and too extensively than too late or not extensively enough. He gives tables of statistics showing the respective value of puncture and pericardotomy, and the results of treatment of purulent pericarditis and concludes with a résumé of 40 cases and a bibliographic index of 472 titles.

**Delorme, E.: Symptoms and Diagnosis of Adhesions between the Heart and Pericardium** (Des signes et du diagnostic de la symphyse cardo-péricardique). *Gaz. d. hôp.*, 1914, lxxvii, 147.  
By Journal de Chirurgie.

If adhesions of the heart and pericardium are to be treated surgically the surgeon must study its



symptoms. This has been one of the most disputed fields in medicine but radiography has simplified it somewhat. The symptoms are determined by inspection, percussion, and auscultation.

Inspection shows (1) disappearance of the apex beat; (2) undulatory movements of the precordial wall; (3) retreat of the apex on systole; (4) retraction of the lower costal and epigastric regions on systole.

Percussion shows increase of the area of cardiac dullness and lack of change in it during respiratory movements and change of position of the patient, fixation of the apex, and some signs of less importance.

The information furnished by auscultation is not of great value, but gallop rhythm, duplication of the second sound, paradoxical pulse, and swelling of the jugulars on respiration are worth retaining.

The chief pathognomonic signs of adhesion at present are the lack of variation in the cardiac dullness and the fixation of the apex. Specialists in heart diseases say that the diagnosis can be made from them alone. The other signs mentioned only confirm it.

Unfortunately the information furnished by radiography is not sufficient to distinguish absolutely between the cases of pure adhesion, in which freeing of the adhesions surgically brings relief, and the complicated cases. There are some signs, however, which may be regarded as indicating simple adhesions: among them are (1) shadows of the surface of the heart without extension to the rest of the boundary between the pericardium and pleura; (2) immobility of the boundaries of the

heart; (3) disappearance of the diaphragmatic sinus; (4) immobility of the apex; (5) constancy in the form of the radioscopic picture of the heart during respiratory movements; (6) absence of positive and almost pathognomonic signs of complicated symphysis, such as the disappearance of the clear retrosternal and retrocardiac clear spaces which indicates mediastinitis; (7) a combination of the signs of simple adhesion.

Delorme emphasizes the importance of absence of the signs of complicated adhesions. J. DUMONT.

## PHARYNX AND OESOPHAGUS

**Kyle, D. B.: Removal from the Oesophagus, by Means of an Oesophagoscope, of a Plate of False Teeth Embedded for Eighteen Years.** *Laryngoscope*, 1914, xxiv, 185.

By Surg., Gynec. & Obst.

The removal of a foreign body embedded for eighteen years is entirely different from the removal of a body recently embedded because of the organization of fibrous tissue together with curvature of the spine, which render the foreign body exceedingly difficult to locate. In the case reported, there had been dysphagia and progressive loss of weight over a considerable period. An X-ray showed the plate to be behind the cricoid cartilage. After three unsuccessful attempts it was finally removed with a long biting forceps through a Kahler oesophagoscope. Very little hæmorrhage or soreness followed the operation but there was still considerable difficulty in swallowing due to loss of tone of the oesophageal muscles.

E. K. ARMSTRONG.

## SURGERY OF THE ABDOMEN

### ABDOMINAL WALL AND PERITONEUM

**Lediard, H. A.: Cases of Chyliform Effusion.** *Clin. J.*, 1914, xliii, 135. By Surg., Gynec. & Obst.

The author reports 4 cases of chyliform effusion: the first associated with probable tuberculosis, the second with Hodgkin's disease, the third with heart and liver disease, and the last was a case with cancer.

The first case the author thinks most interesting. It is that of a boy about 18 years of age, who since the age of five and one-half years had suffered with several attacks of abdominal pain which were diagnosed as "tuberculosis in the abdomen." He was emaciated and the abdomen was greatly distended; this distention had been present for 6 years. At the date of operation the patient had a temperature of 101.6° F. and was suffering from diarrhoea and pressure symptoms from the abdominal distention.

When the abdomen was opened for drainage, 6 pints of a milky fluid escaped, and a drainage tube was introduced. The fluid was alkaline in reaction and contained 0.6 albumin and 0.2 fat.

Death resulted from collapse 21 days after operation. At autopsy the peritoneum was found to be

studded with miliary tubercles. The mesenteric glands were all very much enlarged, and in the region of the pancreas in the midline there was a mass of glands and fibrous tissue one and one-half inches long. The receptaculum chyli was obliterated by this mass. The thoracic duct seemed normal. The lacteals in the mesentery were much dilated, but no rupture was found. Microscopic examination of the glands revealed tuberculosis with a marked thickening of the lymphatic channels. Death was due to tuberculous meningitis.

The second case was that of a girl about 18 years old who presented, in general, a picture similar to the first. In this case the thoracic duct was compressed by a group of glands in the left side of the neck.

In the third case chyliform ascitic fluid was found in a patient of 38 years with "mitral disease." No autopsy was obtained.

The fourth case was that of a woman from whom malignant ovarian cysts had been removed. The author believes that fatty degeneration of the cancer-cells caused the milky appearance of the fluid.

EUGENE CARY.

## GASTRO-INTESTINAL TRACT

**Deaver, J. B.: Gastric Hæmorrhage.** *Surg., Gynec. & Obst.*, 1914, xviii, 294. By Surg., Gynec. & Obst.

Cases of gastric hæmorrhage fall into two groups, the surgical and the non-surgical, or medical. It is as great a mistake to operate on non-surgical cases as it is to withhold operation in surgical bleeding. Successful treatment demands a high degree of diagnostic skill in deciding for or against operation.

Blood which is vomited does not always mean gastric hæmorrhage. There is hæmorrhage from the pharynx or respiratory tract, the blood being swallowed and then vomited; and hæmatemesis in hæmorrhagic inflammation of the biliary tract, the blood reaching the duodenum through the common duct and then regurgitated into the stomach.

Profuse and even fatal hæmatemesis without demonstrable ulceration of the stomach has been observed both at autopsy and at operation. The author has observed a case by gastrotomy in which the whole mucosa was intensely red and thick, and bled at the slightest touch. Such a condition may be considered as a hæmorrhagic gastritis and is probably the result of an intense acute infection of the mucosa, though it may be due solely to an unknown toxic cause.

Hæmorrhage, more or less acute, may result from the typical acute peptic ulcer. Such hæmorrhage is rarely fatal, the vessels opened, being small and their walls still being soft and normal, permit the formation of an occluding clot as blood-pressure is reduced by hæmorrhage.

In chronic ulcer the vessels eroded may be larger; as a result of a sclerosing inflammatory process, the vessel wall is rigid and incapable of contraction.

When hæmorrhage is the result of neoplasm it is rarely remediable by surgery. Operation may be indicated in gastric carcinoma when hæmorrhage chances to be an early symptom, or it may be indicated in advanced cancer when hæmorrhage is so profuse and persistent as to shorten even the period of prognosis given to cancer. The measures to be adopted are excision, gastro-enterostomy, or jejunostomy, in accordance with the pathology found at operation. In the author's opinion, cases of this sort will be excessively rare, as he is greatly opposed to operations being done on cases which are inoperable from the standpoint of cure.

Four essential questions remain to be settled: (1) The recognition of suitable cases; (2) the time of operation; (3) the type of operation to be performed; (4) the proof of the decision by mortality statistics.

**Nicolaysen, J.: The Value of Gluzinski's Test in the Diagnosis of Gastric Ulcer.** *Tr. Am. Surg. Ass.*, N. Y., 1914, April. By Surg., Gynec. & Obst.

Kocher, in 1912, recommended Gluzinski's test as a means of making the differential diagnosis between ulcer and cancer of the stomach. Ulcer

is, as a rule, accompanied by hyperacidity, while cancer is attended by an atrophic catarrh which causes the disappearance of the free hydrochloric acid. When cancer develops with an ulcer as a basis there may be demonstrated in an early stage of the disease an insufficiency of function of the stomach to produce hydrochloric acid. This is shown by giving two test-meals, one following immediately upon the other. While the amount of free HCl will increase from the first light meal to the second heavier (beef) one in cases of ulcer, it will decrease in cases of cancer of the stomach.

The author and his assistant, Grondahl, have examined 86 cases of ulcer of the stomach and duodenum, cancer of the stomach, gastro-enteroptosis, appendicular dyspepsia, and gall-stones. Of the cases of cancer only two had free HCl in the gastric contents. These gave Gluzinski's reaction to wit: the amount of free HCl decreased in the second meal; but the same insufficiency of function was also found in cases of gastro-enteroptosis. In all cases of ulcer except one there was found a pronounced increase in the amount of free HCl in the second meal. This phenomenon may be used as a differential symptom in the diagnosis between ulcer and other diseases of the gastro-intestinal canal, which cause dyspepsia.

In two cases referred from the medical ward with the diagnosis of callous ulcer there was no increase in the amount of free HCl and no ulcer was found by the operation—only adhesions which had given rise to the dyspeptic symptoms. Gluzinski's reaction is reliable; nevertheless, its result is to be considered only as a symptom which must be judged in conjunction with the other symptoms and the history of the case.

**Graham, C.: Observations on Peptic Ulcers.** *Boston M. & S. J.* 1914, clxx, 221.

By Surg., Gynec., & Obst.

The author presents notes on all cases of duodenal and gastric ulcers operated upon at the Mayo clinic during the years 1906 to 1911. It is often difficult to differentiate ulcers of the stomach or duodenum from lesions involving other organs, but the clinical history is by far the most valuable factor in arriving at a correct diagnosis. The physical examination, laboratory findings, and X-ray combined are not so valuable as the clinical history.

The periodicity of the attacks is typical in peptic ulcers. The patient usually has several attacks of gastric distress lasting for days or weeks and then disappearing, the interval being marked by apparently good health. Each attack is characterized by gastric distress, vomiting, etc., which appear daily during the attack with a certain regularity. Many times the patient has suffered for years until finally he is forced to seek relief.

During the attack, pain is the most common symptom. It comes on regularly one-half to four hours after eating, is relieved by eating, vomiting, alkalis, or lavage. The location of the pain and its



radiation is of very much less import than is the time of its appearance and the means which relieve it. The time of the appearance of the pain depends largely on the location of the ulcer.

Vomiting is more common in ulcers of the stomach than in ulcers of the duodenum or pylorus, unless some complication—e. g., obstruction—is present.

There are four groups of cases where it is especially difficult to diagnose the presence of an ulcer: (1) Patients sometimes give a typical history of gallstones and no history of ulcer can be obtained. (2) Patients may give no history of previous gastric distress and the first manifest symptoms are those of chronic ulcer with complications—hæmorrhage, perforation, etc. (3) Patients may have very acute symptoms which are exceedingly distressing and which so overshadow any previous distress that the old trouble is forgotten. (4) Patients whose general condition would point toward malignancy.

J. H. SKILES.

**Scudder, C. L.: Stenosis of the Pylorus in Infancy.**  
*Ann. Surg., Phila., 1914, lix, 239.*

By Surg., Gynec. & Obst.

The author treats the subject in four ways: (1) A systematic statement of the facts concerned; (2) reasons for surgical treatment; (3) a consideration of two problems encountered; and (4) a review of cases.

1. (a) *Pathology.* A smooth, firm, non-adherent pyloric tumor is always present, narrowing the lumen of the pylorus. It is an overgrowth of muscle tissue and not dependent on muscular spasm.

(b) *Etiology.* It is congenital because (1) it is often found at the third fetal month; (2) symptoms appear soon after birth; (3) it is frequently accompanied by club-foot and imperforate anus; and (4) it often contains Brunner's glands.

(c) *Symptoms.* Loss of appetite, persistent, projectile vomiting, small bowel passages, progressive loss of weight, visible peristalsis from left to right across the upper abdomen, and palpable tumor in 60 to 80 per cent of cases.

(d) *Diagnosis.* The X-ray is the chief aid in differentiating this condition from serious cases of pyloric spasm, otherwise the diagnosis should be comparatively easy.

(e) *Prognosis.* The mortality is high and the length of time a baby will live depends on the degree of stenosis.

2. Medical treatment can cure spasm of the pylorus, but utterly fails in true obstruction, giving an estimated mortality of 80 to 90 per cent.

The first seven years of surgical interference was necessarily unsettled and gave a mortality of 46.5 per cent. In the last seven years posterior gastro-enterostomy has been accepted as the operation of choice and to-day the mortality is about 13.8 per cent, depending a great deal on the baby's condition at the time of operation.

3. The two problems are (1) the effect of gastro-

enterostomy upon the metabolism of the body, and (2) the ultimate end of the muscular tumor.

The author together with Talbot of Boston has found that gastro-enterostomy has absolutely no deleterious effects on bodily metabolism and normal development. He also concludes, from different sources, that the tumor probably persists and does not disappear.

4. In conclusion, a report is given of seventeen cases operated on by the author, which bears out in detail his theories and statements.

PHILLIPS M. CHASE.

**Lerche, W.: Spastic Tumor of the Pyloric Canal, and Other Spastic Conditions of the Stomach; Their Surgical Treatment.** *Surg., Gynec. & Obst., 1914, xviii, 358.* By Surg., Gynec. & Obst.

The author first gives a brief review of the anatomy of the stomach, which shows how the various anatomists differ in their description and nomenclature. Particular attention is called to the pyloric canal. A brief historical review is given of the movements of the stomach, with a report of six cases representing various forms of spastic contraction of that organ. Three of the cases are of the so-called idiopathic variety, i. e. no cause in or about the stomach could be found to account for the condition.

In the first case the patient had had pain in the epigastrium and had felt a lump above the umbilicus for three months. The hard tumor was always found present and of the same size on each of a number of examinations. At operation the tumor was found to involve the pyloric canal. The pyloric end of the stomach was resected and on examination of the specimen no pathologic changes were found. The author considers this case analogous to the so-called "congenital stenosis of the pylorus" in the new-born.

In the second case the patient had been troubled with much vomiting and distention of the stomach in childhood. Later, there was sour stomach, nausea, vomiting, and epigastric pain, upon which prolonged rest in bed, diet, etc., had no influence. At operation a spastic pylorus with a hypertrophied sphincter was found. Posterior gastro-enterostomy with occlusion of the pylorus was done after Wilms.

The third was a case of chronic cardiospasm of many years' standing, complicated by acute pylorospasm, with enormous distention of the stomach. A posterior gastro-enterostomy was performed and the cardiac end of the œsophagus stretched.

Case four was a spastic hour-glass stomach caused by pressure from a dermoid cyst situated under the umbilicus.

The fifth case was a combined cicatricial and spastic hour-glass stomach caused by ulcer.

The patient in the sixth case had numerous attacks of pylorospasm with enormous distention of the stomach after swallowing a large number of pebbles.

The author reaches the following conclusions:

1. A universal description and nomenclature of



the stomach acceptable to the anatomists, physiologists, clinicians, and X-ray workers would be desirable.

2. The pyloric canal has an important physiological function, and its pathology is of interest.

3. There seems to be a resemblance functionally between the pyloric canal and the lower end of the oesophagus — the epicardia.

4. Spastic contraction at different parts of the stomach may take place even where there is no augmentation of muscle fibers to form a sphincter. The contracted part may form a tumor of cartilaginous hardness.

5. Idiopathic spastic contractions may occur in the different parts of the stomach.

6. The nervous apparatus of the stomach is a very important factor in the pathology of that organ.

**Cope, V. Z.: The Early Diagnosis and Treatment of Ruptured Intestine.** *Proc. Roy. Soc. Med.*, 1914, vii, Surg. Sect., 86. By Surg., Gynec. & Obst.

Traumatic rupture of the intestine without any wound of the abdominal wall is often very difficult of diagnosis, and yet for a successful outcome an early diagnosis is imperative.

The symptoms in the order of their importance are as follows: Pain is constant except in very few of the cases and in these there is usually some other sign which points toward the correct diagnosis. Pain is demonstrated in four ways: (1) The expression of the countenance may be anxious; (2) pain is complained of at the site of the lesion and gradually extends; (3) pain may be evoked by deep pressure over the site of the lesion; and (4) in many cases the pelvic peritoneum is felt, by rectal examination, to be painful on pressure.

Vomiting is a frequent and important symptom and if conjoined with pain is quite suggestive enough to justify operation. The vomiting of bilious matter is said to be especially significant.

Distention is a late symptom of peritonitis and should not be waited for. Diminution in the liver dullness is a symptom which should never be waited for. Restlessness is often found with intestinal rupture but it also occurs with many other intra-abdominal conditions. Superficial respiration is the natural consequence of commencing peritonitis, because of the pain which ensues if a deep breath is taken. The signs of free fluid are not usually present in the early period. Rigidity is an early and very valuable symptom.

Provided there are no chest complications and that renal trauma is excluded, the author advocates opening the abdomen on the suspicion of ruptured intestine in the following conditions:

1. When severe abdominal pain persists for more than six hours after an injury, if the pain be accompanied by either (a) vomiting, especially bilious vomiting; or (b) a pulse gradually rising from the normal; or (c) persistent local rigidity tending to extend; or (d) deep local tenderness with shallow respiration.

2. When abdominal pain is absent or very slight, but the pulse rises steadily hour by hour and the patient is very listless or restless.

Of course the advent of any of the typical signs of extensive peritonitis or hæmorrhage would make immediate operation imperative.

In the treatment of rupture of the intestine the greatest amount of discussion centers about two questions: (1) What measures should be taken toward cleansing the peritoneum? and (2) Should drainage be used?

From a review of a considerable series of cases the author comes to the following conclusions: (1) That irrigation with saline solution is inadvisable in cases that are operated on early, and that with late cases it does not seem to affect the patient whether irrigation is used or not; (2) that drainage is probably the safest plan.

J. H. SKILES.

**Case, J. T.: X-Ray Observations on Colonic Peristalsis and Antiperistalsis, with Special Reference to the Ileocolic Valve.** *Med. Rec.*, 1914, lxxxv, 415. By Surg., Gynec. & Obst.

Owing to the abundant material afforded him as röntgenologist to the Battle Creek Sanitarium, and to St. Luke's Hospital, Case has examined, in the last thirteen months, 1,500 individuals by means of the X-ray following a bismuth meal. By means of memoranda dictated at the moment, by röntgenograms or by tracings, he has recorded the findings in over 60 cases in which visible peristaltic waves have actually been seen during the fluoroscopic screen examination.

In 37 cases, antiperistalsis was observed. The antiperistaltic waves, in most cases, originate in the transverse colon near the hepatic flexure, proceeding toward the cæcum, usually disappearing at a point corresponding approximately with the ileocolic junction. Antiperistalsis has also been seen, however, in the descending colon, especially in cases of chronic or acute bowel obstruction.

Case's observations convince him of the existence of a tonic contraction ring in the right half of the transverse colon. The exact location of this tonic ring varies with the tonicity of the proximal colon, but usually exists at a point near the middle of the right half of the transverse colon.

The writer again calls attention to a phenomenon previously described by him as a sign of serious bowel obstruction; viz., exaggerated antiperistalsis. In every case of carcinoma of the colon he has studied, the presence of exaggerated antiperistalsis has been evident. It has occurred in all parts of the colon. It has also been recognized in spastic constipation and in benign obstructions of the bowel.

In every case following ileosigmoidostomy studied by the writer, retrograde peristalsis was observed in the left half of the colon.

Mass peristaltic waves, first described by Holzknecht, who reported two cases, are further studied by Case, and during the last sixteen months he has seen mass peristaltic movements in 37 different



individuals. The bowel contents suddenly lose their haustral markings and are formed into an ovoid, sausage-shaped mass with perfectly smooth edges, rounded at the ends. This mass travels at about twice the rate of peristaltic waves in the stomach, the distance traveled varying from three to four inches to several feet. After coming to rest, the mass regains its haustral markings, the time required for the reappearance depending upon the consistency of the bowel contents — quickly if the content be semi-fluid, more slowly if the bowel content is of firmer consistency.

Massage and mechanical vibration were carefully studied in a number of cases. The immediate effects observed have been a deepening of the haustral contractions and sometimes the appearance of antiperistaltic waves. The conclusion was reached that the well-recognized favorable influence of massage and mechanical vibration on bowel motility must be produced indirectly through increasing the tone of the bowel muscle rather than through any actual mechanical pressure of the bowel contents onward. To produce any true electrical stimulation, a bipolar electrode must be employed.

Case gives special attention to the study of the function of the ileocolic valve, believing that our present knowledge of the antiperistaltic function of the colon demands all the more a recognition of the normal competency of the ileocolic valve. In the 1,500 cases above referred to, incompetency of the ileocolic valve was found in nearly 250 instances, or one in six. Such a large proportion of incompetent ileocolic valve cases is explained by the fact that the 1,500 cases were gastro-intestinal cases submitted for bismuth meal study and hence the presence of ileocolic valve incompetency might be expected in a relatively large proportion of cases.

Case emphasizes the fact that the old idea that insufficiency of the ileocolic valve produced diarrhoea is erroneous and that, on the contrary, in most cases the opposite condition is present; viz., constipation. Present knowledge of the antiperistaltic phenomena in the colon makes it easy to understand why ileal stasis and constipation are found rather than hypermotility when reflux from the colon into the ileum is no longer prevented by a competent ileocolic valve.

While it is generally recognized that rectal alimentation is, on the whole, unsatisfactory, there are enough cases of successful rectal alimentation to warrant the continuance of the practice. Case believes that these instances of rectal alimentation are cases of ileocolic valve incompetency.

#### LIVER, PANCREAS, AND SPLEEN

**Mann, A. T.: A Rubber Tube in the Reconstruction of an Obliterated Bile Duct.** *Surg., Gynec. & Obst.*, 1914, xviii, 326. By Surg., Gynec. & Obst.

A rubber tube was used in a young woman of 28 years, in whom the common bile duct had become obliterated as the result of cicatricial contraction

following infection and sloughing due to gall-stones removed together with the gall-bladder at a previous operation two years before.

About four months after leaving the hospital a slight jaundice began, which gradually deepened and changed in type until the patient had the bronzed color of a Mongolian. At the second operation, all landmarks in the region were found obliterated by rather dense adhesions. Nothing was left of the common duct except a little thickened connective tissue.

One end of a  $\frac{1}{8}$ -inch rubber tube,  $1\frac{3}{4}$  inches long, was inserted into the convex surface of the mobilized duodenum which was then inverted by three circular linen sutures, as in the Kader-Senn operation for gastrostomy, to form a papilla which might later act as a valve and close under the intraduodenal pressure during peristalsis, and to prevent regurgitation into the bile-ducts and the consequent infection of the ducts. The other end was inserted through an incision into the stump of the common hepatic duct. The duodenum and the hepatic stump together with the surrounding connective tissue were approximated with two mattress stitches, one on either side. A drain of rubber tissue was inserted down to the region but not into actual contact.

Five months after operation the patient had gained 33 pounds; had lost her deep jaundice and the whites of her eyes were clear; X-ray showed that the tube had been passed.

**Hutchison, R. and Bland-Sutton, J.: Discussion on Enlargement of the Spleen in Children.** *Proc. Roy. Soc. Med.*, 1914, vii, Sect. Dis. Children, 41. By Surg., Gynec. & Obst.

HUTCHISON opens the discussion by suggesting the following grouping of this condition:

1. Tumors.
2. Infections: typhoid, ulcerative endocarditis, malaria, tuberculosis, lymphadenoma, chronic arthritis.
3. Chronic venous congestion.
4. Metabolic disorders.
5. Blood diseases: leukæmias, chloroma, congenital anæmia with splenomegaly and jaundice.
6. Splenic anæmia of adult type.
7. Syphilitic: in infancy; in childhood.
8. Splenomegaly with acholuric jaundice.
9. Splenomegaly with cirrhosis of liver.
  - a. Portal cirrhosis.
  - b. Biliary cirrhosis.
  - c. Syphilitic cirrhosis.
  - d. Banti's disease.
  - e. Congenital obliteration of the bile-ducts.

It will be noticed the classification is mainly a clinical one, without any pretense of being strictly logical and that there is some overlapping between the different groups.

Hutchison does not believe that syphilis plays a very important part in the etiology of this condition. He also believes that splenectomy is curative in

cases of splenic anæmia of the adult type and in acholuric jaundice, though the comparatively benign course of the latter renders it questionable whether operation is justified unless under exceptional circumstances.

BLAND-SUTTON discusses the present knowledge regarding the function and pathology of the spleen. He states that little is definitely known of the physiology and pathology, but still a working hypothesis is now available for the surgeon. The enlarged spleen associated with numerical reduction of the red corpuscles in splenic anæmia in children is due to functional overactivity of the spleen. The enlargement is due to the accumulation of the products of hæmolysis which produces an acholuric jaundice. Giant spleens and wandering spleens in adolescents are the result of changes which begin during infancy and slowly progress with the growth and development of the patient. The author cites a case in which splenectomy cured the condition.

While his facts are few, Bland-Sutton believes that the spleen may be removed from children without interfering with their growth or development. He cites a patient operated at 5 years of age, who developed normally and is now in the best of health, 18 years later. The technique of the operation is briefly described.

The most extraordinary feature connected with splenectomy is the rapidity with which the normal numerical proportion of the red corpuscles is re-

established—sometimes in a few weeks. The removal of a leukæmic spleen always ends in disaster.

SUTHERLAND states that surgical procedures in splenic anæmia of infancy have gone ahead of pathological knowledge, for the exact nature of the disease is not yet known. Splenectomy clearly means the relief of all symptoms and cure of the patient.

There seems to be some familial tendency in splenic anæmia. The symptoms are sufficiently definite to establish a diagnosis after the first stage has passed. While opinions differ as to the nature of the disease and the disturbance produced, Sutherland believes it is due to an excessive destruction of the blood-cells in the spleen. The blood-vessels in such a spleen are markedly dilated, and the organ may be said to be inebriated with the exuberance of its own blood supply and causes a destruction of the blood corpuscles. It is assumed that there is not necessarily any disease in the spleen, but only a disturbance in certain of its functions from hyperæmia. This accounts for the varying conditions present in family cases. The congenital defect may be referred to the vascular supply of the spleen, and, according to the degree of that defect, some cases have no symptoms, others are mildly affected, while still others show progressive symptoms leading to death from excessive blood destruction. The author then briefly cites two cases cured by splenectomy.

EDWARD L. CORNELL.

## SURGERY OF THE EXTREMITIES

### DISEASES OF BONES, JOINTS, MUSCLES, ETC. GENERAL CONDITIONS COMMONLY FOUND IN THE EXTREMITIES

**Cohn, I. and Mann, G.: Osteogenetic Function of Periosteum and Bone Transplants.** *Southern M. J.*, 1914, vii, 214. By Surg., Gynec. & Obst.

After briefly reviewing the theories which have been held regarding the regeneration of bone, the authors summarize the information which has been obtained from their experimental work.

Free bone transplants minus periosteum placed in muscle, omentum, spleen, thyroid gland and the anterior chamber of the eye have shown active evidence of proliferation of new bone. The transplant into the anterior chamber of the eye was done more than nine months ago. In no instance has the transplant been absorbed.

Periosteum has been transplanted as a band around the carotid artery, into muscle, and into the anterior chamber of the eye, and in no instance did it show an osteogenetic function. Before sacrificing the animal in which the periosteum had been used as a band around the artery, the vessel was exposed and pulsation observed on both sides of the transplant. Palpation revealed no evidence of obstruction of the lumen of the vessel.

That periosteum is not essential for the repair of defects in bone seems clearly proven by an experiment in which both tibiae of an animal were fractured. On one side the periosteum was stripped from the bone in the neighborhood of the fracture, on the other side the periosteum was left intact. Union resulted on both sides. Further experiments along this line are being conducted by the author.

At present the authors believe in the osteogenetic function of the free bone transplant; that periosteum has no osteogenetic function, but that it is a connective-tissue tube in which centers of ossification are laid down. Periosteum is a limiting membrane and a source of blood supply for bone.

**Désé, F.: Experimental Echinococcus of Bone** (*Echinococcose osseuse expérimentale*). *Compt. rend. Soc. de biol.*, Par., 1914, lxxvi, 378.

By Journal de Chirurgie.

In a previous note Désé has published a case of experimental echinococcus of bone; a double hydatid cyst of the superior and inferior maxillæ, resulting from an injection of echinococcus into the peripheral end of the common carotid. By a new experiment of the same kind he obtained in another rabbit a



double hydatid cyst of the scapula. One of the cysts was developed in the periosteum, the other in bone tissue, being moulded to the form of the intercommunicating alveolar cavities. The periosteal localization is new, and hitherto unknown to pathologists, Désé says. PIERRE CRUET.

**Fassett: Cardinal Principles in the Management of Bone Tuberculosis.** *Northwest Med.*, 1914, vi, 35. By Surg., Gynec. & Obst.

Relative to the management of bone tuberculosis, Fassett says that early and accurate diagnosis is necessary for its successful treatment. The most important sign of bone tuberculosis is "involuntary muscle spasm, which limits the motion of the joint."

Fassett emphasizes the fact that repeatedly the condition is termed "rheumatism" because of the mother's statement that the child is "run down and acts stiff or limps," the family doctor apparently thinking it of little significance.

He states that bone tuberculosis without mixed infection shows but slight increase, if any, over the normal temperature of children. Conditions mistaken for tuberculosis have been osteomyelitis, chronic infectious arthritis, arthritis deformans, and developmental abnormalities.

Fassett divides the treatment into six divisions: (1) rest; (2) the prevention of deformity; (3) fresh air; (4) good food; (5) the prevention of mixed infection; and (6) operation when necessary.

Casts, braces, or recumbency with tractors are restful and contribute to a general physical gain, with a reduction of toxins introduced into the circulation.

Rest and suitable fixation at the right time will prevent deformity.

The bad results of bone tuberculosis are far less than those following mixed infection.

The author advocates the use of the trocar with aseptic care, thus preventing mixed infection. Repeated evacuations are necessary. No tuberculous joint should be incised unless there is an absolute indication for such treatment. The best results have been by the fixation and hygienic treatment. The operations of Lange, Albee, and Hibbs have gained favor also.

Fassett deplors the so-called "scraping of the bone" which has no place in the treatment of tuberculosis. JOHN H. SHAW.

**Kidner, F. C.: Diagnosis and Treatment of Chronic Non-Tubercular Joint Diseases—Rheumatism.** *J. Mich. St. M. Soc.*, 1914, xiii, 160. By Surg., Gynec. & Obst.

The author gives a brief résumé of the symptoms and treatment of (1) infectious, (2) atrophic and (3) hypertrophic arthritis.

The infectious type includes all those which originate from infection of the joint structures through the blood stream with bacteria or their products. The joints are swollen, tender, painful, and stiff; the periarticular structures are principally

involved; the joints may contain fluid; the X-ray does not reveal any bone changes but may show thickening or atrophy in the periarticular structures.

The treatment of the infectious type includes putting the joint at rest, drawing off the fluid if any exists, preventing deformities by means of splints and removing the cause or focus which causes the infection; this may be located in the tonsils, accessory sinuses, skin, pelvis, gall-bladder, large or small intestine, lungs, prostate, or epididymis. Autogenous vaccines, serums, and phylacogens if applied carefully, may be used with benefit; salicylates are of value in relieving pain and protecting the heart from invasion. Careful massage with active and passive motion should be started when the acute symptoms have subsided. In the more chronic joints forcible manipulation may be necessary or function may be restored by arthroplasty.

Atrophic arthritis begins insidiously, usually in the small joints, gradually extending, in a more or less orderly manner, after months or years, to the larger joints.

The affected joints present a fusiform swelling, only slightly tender and not often painful until far advanced. Normal motion is limited but motion in abnormal directions is present. Crepitation within the joint is easily elicited; the X-ray shows bone destruction and erosion of the cartilages. Late in the disease new bone formation begins about the joint which presents the appearance of the hypertrophic type.

Use of the joint in the atrophic type should be encouraged, for if kept in motion the joint will often adapt itself to a position which in fair motion is possible.

Hypertrophic arthritis comes on gradually without constitutional symptoms. It may occur in any joint but the distal phalangeal joints are usually involved which gives a clue to the diagnosis. The periarticular structures are not involved but there are bony prominences which form about the joint and are easily detected by aid of the X-ray. Motion of the joint is painful and limited.

The treatment consists of putting the joint at rest and preventing an increase in the bony outgrowths. An infectious or toxic origin if discovered should be removed. ROBERT B. COFIELD.

**Geist, E. S.: Chronic Multiple Arthritis.** *J. Lancet*, 1914, xxxiv, 128. By Surg., Gynec. & Obst.

The author advises a most careful search for a focus of infection in the cases of multiple arthritis and believes that a great many cases of so-called "chronic arthritis" are nothing but the joint manifestation of a chronic indolent infection or the results of absorption of toxic matters from other portions of the body. Several most interesting and instructive cases are cited where foci of infection were found and removed with subsequent improvement, and in some cases where joint destruction had not advanced too far, there was an entire clearing up of joint symptoms. ARTHUR J. DAVIDSON.

**Tompkins, J. M.: The Treatment of Rheumatic Infections.** *Virg. M. Semi-Month.*, 1914, xviii, 501.  
By Surg., Gynec. & Obst.

The author emphasizes the importance of thorough examination and the removal of sources of infection in all rheumatic conditions where the relationship is apparent. In chronic cases of low opsonin index there should be suspension of dead micrococci isolated from the foci, or, if these are not to be had, stock bacterins are used. Hygiene, tonics, changes of climate, iron and arsenic, thyroid and thymus therapy, salicylates, and hexamethylenediamine are useful aids. Elimination by baths, diuretics, salicylates, and large amounts of H<sub>2</sub>O are recommended. Symptomatic treatment for pain, rest and orthopedic treatment of the usual kind, and prophylaxis are briefly mentioned.

HENRY W. MEYERDING.

**Nelson, J. G.: Acute Rheumatic Arthritis and Allied Infectious Conditions.** *Virg. M. Semi-Month.*, 1914, xviii, 497. By Surg., Gynec. & Obst.

The author classifies the above into the three following groups:

1. Acute rheumatic arthritis, occurring alone, or complicated, or followed by inflammations of serous or mucous membranes, tendon-sheaths, aponeuroses, chorea, etc.

2. Acute rheumatic inflammations of the tonsils, serous and mucous membranes, chorea, etc., without arthritis.

3. Acute arthritis with a definite infected area in some other portion of the body, such as tonsils, gall-bladder, bowels, prostate, etc.

After citing a number of interesting cases, although claiming no originality for his deductions, the author concludes that there is an arthritis due to a definite coccus or strain of cocci which have an affinity for serous membranes, aponeuroses, tendon-sheaths, etc., and whose source is probably the nasopharynx. The activity of these agents is self-limited in any one site. The infected focus of acute and chronic arthritis is usually distant from the joint involved.

HENRY W. MEYERDING.

**Cheatle, G. L.: Sprains and Strains of the Knee-Joint.** *Practitioner*, Lond., 1914, xcii, 351.

By Surg., Gynec. & Obst.

The author describes sprains and strains of the knee-joint, giving special attention to the history, method of examination, various classes of patients, with the pathological anatomy of each case, and suggesting methods of treatment.

Sprains and strains of the knee-joint are most commonly caused by overtensing the articulation with the foot firmly implanted upon the ground, fixed or held by other means.

The history of the trouble is that while running, after a fall or accident, the patient suddenly has a severe pain in the knee and the knee-joint locks; or there may be no history of locking. The knee is easily straightened by bystanders, although the

patient is unable to do so himself. It may be the first or a common occurrence, and special inquiry should be made as to the frequency.

Comparison should be made of knees and movements of the joint, atrophy of the muscles, local temperature, swelling, which may be due to oedema of soft parts, thickening of synovial membrane or fluid in the knee-joint.

Lateral mobility indicates general stretching or rupture of the ligaments.

When the anterior ligament is ruptured, stretched, or the insertion torn off, the tibia can be brought forward without articulating with the femur. When the posterior ligament is ruptured, stretched, or the insertion torn off, the tibia can be pushed back without articulating with the femur. When both crucial ligaments are involved the tibia can be rotated internally on the femur.

External rotation of the tibia indicates rupture or stretching of the two lateral ligaments. The quadriceps extensor tendon or ligamentum patellæ may be ruptured and the patient be unable to extend the leg.

Every case should have an X-ray photograph taken to show any injury to the bone.

It is very difficult to diagnose the separation of the semilunar cartilage unless it can be felt, and then it may be split, torn, or partially detached. Articular cartilages may be torn off by violence, the fringe of synovial membrane may be nipped or broken off and behave as a loose foreign body.

Real locking is due to dislocated cartilage. If it has occurred for the first time, the cartilage should be allowed to resume its normal attachments. After the cartilage has been replaced, the limb is immobilized about three weeks, then passive motion used daily, the splint being kept on two weeks more, then the injury is treated as a sprain where no locking has occurred.

If locking is due to a loose body, it is best to remove the cause, but no attempt should be made to do so until the body has been fixed in a suprapatellæ pouch. If a foreign loose body is present, constant X-ray photographing should be a guide as to its location.

Not too much stress should be laid on absence of locking in determining the presence of the loose body or something nipping between the bones.

Severe sprain or rupture of the ligamentum patellæ requires rest (first 24 hours) with splint or bandage and cold application the first hour to arrest hæmorrhage, then hot fomentations, and at the end of 24 hours gentle massage and passive movements which should continue several days. The patient may walk in a week, but the massage and exercise should be continued.

Where the limb has been kept at rest too long, confined with or without splints, massage, and applications, swelling and pain occur when the patient gets about, and again he is put through the former treatment. At this stage, splints and bandages are useless. There should be no weight on the limb



except such as is absolutely necessary for at least three weeks, and the patient should perform regular specified exercises with a weight, pulley, or foot dumb-bell. After three weeks walking may be resumed, and after six weeks golf and tennis may be attempted, the patient stopping at the point of fatigue.

The author calls especial attention to the use of the foot dumb-bell exercise for strengthening the flexor and extensor muscles of the knee and states that the exercise should be done daily for at least one year.

C. C. CHATTERTON.

**Smith, S. A.: Loose Bodies in the Knee-Joint.**  
*Canad. M. Ass. J.*, 1914, iv, 209.

By Surg., Gynec. & Obst.

The condition of loose bodies in the knee-joint has been recognized by surgeons for many years. Loose bodies arise from several causes. Whitlock divides them into those bodies introduced from without, those derived from separation of one of the component parts of the joint, and those derived from growth or formation of structures not normally forming part of the joint.

In cases where the body has been introduced from without the common intruder is a needle. These cases are rare. In the more important group of cases the body is due to some detachment of a portion of articular cartilage. The internal semilunar is the most frequent source of trouble. In this group of cases there is always a history of injury. Effusion follows, and the joint may become locked at the time of injury or at varying intervals afterwards when the joint is subjected to increased strain.

In the group of cases derived from growth or formation of structures not normally forming part of the joint, there is no history of injury. Organic changes have occurred in the joint, the result of which is a congestion and proliferation of blood-vessels which cause changes in both cartilage and synovial membrane. As this process increases, obliterative vascular changes gradually occur and reduce the blood supply. The result on cartilage is that pieces become detached owing to rarefying osteitis occurring at the chondro-osteal junction, whereas the connective tissue of the synovial membrane becomes hyaline, then chondrified, and finally perhaps calcified.

The diagnosis of bodies of this nature is simplified by means of the X-ray. In cases where the loose bodies are derived from separation of one of the component parts of the joint, a radiograph as often as not fails to aid in diagnosis unless the loose bodies have a bony basis.

R. O. RITTER.

**Parker, C. A.: Derangements of the Semilunar Cartilages of the Knee-Joint.** *Chicago M. Recorder*, 1914, xxxvi, 143.

By Surg., Gynec. & Obst.

Parker reports 5 cases operated and in each instance a cartilage was removed. He emphasizes the point that when a joint is opened for the removal

of a cartilage, it should be removed unless it is plainly evident that other conditions are responsible for the trouble. This was impressed upon him by his experience in these 5 cases, in 3 of which nothing abnormal was observed upon the inspection of the interior of the joint, although the removed cartilages showed distinct pathological changes; one case had been operated upon by an eminent surgeon but no cartilage had been removed, as "nothing abnormal" was seen. This patient later gave all the evidence of possessing a defective cartilage that was probably present at the time of operation.

The internal semilunar was affected in all 5 instances, the left one 3 times, and the right one twice. Fixation of the extended knee in a plaster cast reaching from just above the malleoli to the perineum, for a period of six to eight weeks after the operation was practiced, the results apparently justifying the procedure, as in each instance the recovery was complete with normal function of the joint. Apparently, the removal of the cartilage in no way affects the stability of the joint, while its presence under pathological conditions is a menace to its integrity. The author prefers the Jones position for operation with the leg hanging over the end of the table.

**Williams, R. S. and Wade, W. R.: A Fetid, Aërobic Coccobacillus Found in a Case of Suppurative Arthritis of the Knee** (Un coccobacille aërobic fétide dans un cas d'arthrite suppurée du genou).  
*Compt. rend. Soc. de biol.*, Par., 1914, lxxvi, 263.

By Journal de Chirurgie.

The authors had occasion to make a bacteriological study of a case of fetid suppurative arthritis of the knee which had presented a fistula for a long time. They isolated two microbes from the pus, a streptococcus and a coccobacillus. The latter, on cultivation, gave forth the same fetid odor as the knee.

It was a polymorphous, non-motile coccobacillus, varying in form from a coccus to an elongated bacillus, Gram-negative, strictly aërobic. The colonies developed well on all the ordinary culture media at 37 degrees; they were at first transparent and became yellowish on the second day. They liquefied gelatine very slowly, at the end of about two months, coagulated milk, did not produce indol, fermented glucose, gelactose, and arabinose without the production of gas; did not ferment maltose, saccharose, raffinose, lactose, or inulin. The cultures were pathogenic for the mouse, cobra, and rabbit. Injected intraperitoneally they caused death in a short time but injected subcutaneously they caused the formation of an abscess containing a caseous substance at the end of 10 or 15 days.

It is possible to obtain a vaccine against this microbe by immunizing rabbits. A dose of 0.2 of this serum neutralizes a 24-hour culture on agar, which is sufficient to kill a cobra weighing 250 grammes in 3 hours. This coccobacillus differs from all fetid microbes known heretofore.

PIERRE CRUET.

## FRACTURES AND DISLOCATIONS

**Cohn, I.: Fractures of the Greater Tuberosity of the Humerus.** *N. Orl. M. & S. J.*, 1914, lxvi, 670.  
By Surg., Gynec. & Obst.

Cohn reports two cases of fracture of the greater tuberosity of the humerus with an outline of past methods of treatment, the anatomical data which should act as guide in the treatment of these cases, and gives the method of treatment adopted in cases observed.

Believing that anatomic data is overlooked in these conditions he reviews the insertion of muscles attached to the tuberosities. In view of this information the following treatment is advocated: Abduction and external rotation of the arm to favor apposition of the fragments and to overcome the action of the subscapularis, which has a tendency to lacerate the capsule and thereby favors dislocation. Further external rotation favors apposition of the shaft with the tuberosity, over which we have no control. Abduction also relieves the pressure on the tuberosity by relaxing the deltoid.

One of the cases, a patient aged 50, had fallen forward on the shoulder. The chief symptom was pain, particularly on pressure over the tuberosity. External rotation was impossible, and abduction was markedly limited.

Both cases mentioned recovered with perfect function in the shoulder.

**Delatour, H. B.: A Review of Cases of Fracture of the Patella.** *Tr. Am. Surg. Ass.*, N. Y., 1914, April.  
By Surg., Gynec. & Obst.

The author calls attention to the controversy a decade ago as to whether the open operation was necessary and that now as far as the patella is concerned, surgeons are united on the early operation, but as regards the long bones, opinion still differs.

In the report there were 87 patients with a total of 101 fractures. Three were simultaneous fractures of both patellæ and in one there was also a fracture of the cervical vertebra. On these cases there were 96 operations with no operative mortality, and in all, useful joints resulted; in 4 motion was somewhat limited. The operation consisted in a curved transverse incision across the knee above the patella, suture of the tears in the lateral capsule and across the front of the patella with chromic catgut. These were reinforced by a suture passed through the patella tendon above and then below, in mattress fashion and then tied. The object of this suture is to relieve the transverse sutures of strain when there is contraction of the quadriceps muscle, especially when recovering from anæsthesia.

Stress was laid on the early use of passive motion. A posterior splint is recommended to be worn for at least twelve weeks, but this is removed at night so that active movements may be practiced, when there is no fear of strain.

Operation was usually performed at the end of 48 hours but occasionally for some special reason it was

delayed for a week. The results where the bone was broken in several fragments were just as good as in the simple transverse cases.

## SURGERY OF THE BONES, JOINTS, ETC.

**Owen, H. R.: Arthroplasty.** *Ann. Surg.*, Phila., 1914, lix, 426.  
By Surg., Gynec. & Obst.

Various operations for mobilizing ankylosed joints have been done since 1826 but none can be said to be always successful. The latest idea is the interposition of fascia and fat after separating the fragments. This is best for the knee- and hip-joints because they are weight-bearing joints and the hygroma formation which takes place as a result of the fat is very desirable. In case of shoulder, elbow, or mandible, however, the use of animal membranes such as chromicized pig's bladder, peritoneum of ox, or wall of ovarian cyst is to be preferred for interposing. Indications for arthroplastic operation for ankylosis depend largely on what joint is involved. In case of a hip, shoulder, or elbow, operative effort should be made toward mobilization since these joints are almost useless if stiff. An ankylosed knee, on the other hand, if in reasonably good position should be let alone.

W. A. CLARK.

**Woodward, C.: Treatment of Fractures by Direct Extension of the Fragments.** *Practitioner*, Lond., 1914, xcii, 360.  
By Surg., Gynec. & Obst.

The author reviews briefly the advancement in the treatment of fractures in recent years. He mentions the anatomical operations of Lane, extension methods of Codvilla, massage and mobilization methods of Championniere, and with great detail describes the Steinmann apparatus, the method of using, and its advantages.

The Steinmann apparatus consists of steel pins, three and one-half to five millimeters in diameter, long enough to extend about two inches from the skin on either side of the limb. A plate is made to attach to the end of the pins upon which a cord is fastened to make extensions after the pins are driven through the os calcis.

The technique of disinfection of the skin, insertion of the pin, treatment of skin puncture, position of limb, the direction of pull, amount of weight, duration of extension, lateral displacement and rotation of limb, removal of pin, and after-treatment are all carefully considered.

The advantages of the Steinmann method of direct extension, the author claims, are many. Direct extension is vastly superior to the adhesive plaster method. Shortening is overcome; the fragments are brought more easily into correct alignment. There is practically no pain after extension is once applied. There is no danger in the operation when it is carefully done. It is much easier than the Lane plate method and the anatomical results are all that could be desired. CHATTERTON.



## ORTHOPEDICS IN GENERAL

Saunders, E. W., Meisenbach, R., and Wisdom, W. E.: *The Causation and Prevention of Infantile Paralysis*. *J. Mo. St. M. Ass.*, 1914, x, 305.  
By Surg., Gynec. & Obst.

The authors cite a composite picture of fatal disease with paralysis occurring on a farm among the fowls, hogs, and other domestic animals and at the same time one of the farmer's children being afflicted with infantile paralysis. The authors claim to have found a common cause of such maladies in a virus which is carried by a species (*Lucilia cæsor*) of green fly. They find that "all attempts to inoculate fowls, guinea pigs, or other animals with the blood or tissues of animals dying from ingestion of the specific larvæ have failed."

The death of a fowl or guinea pig within six hours has been caused by the oral administration of a single specific larva, or by the intraspinal injection of a few drops of emulsion of a specific larva. Paralysis and death was also produced in monkeys by administering the larvæ to them. They were able to transmit the disease from one monkey to another by intraspinal injections of cerebrospinal fluid or of spinal cord emulsion of affected monkeys.

Two days after feeding on the carcass of a poliomyelitic fowl, or other animal, the green fly deposits ova in the carcass which develop into the toxic larvæ. It is assumed that there are three factors: (1) A potential virus, (2) an active virus, and (3) a neurolytic toxalbumose. The green fly as a carrier explains the prevalence of the disease in summer, the fly season. The authors report numerous experiments upon which they base their conclusions and urge that precautions be taken to prevent contamination of food by flies.

W. A. CLARK.

Cooley, E. L.: *Talipes or Club-Foot*. *Med. Fortnightly*, 1914, xlv, 97. By Surg., Gynec. & Obst.

The author thinks that the diagnosis of equinovarus is easy, but it is another thing to properly estimate the degree of deformity upon which to base an intelligent prognosis.

Club-foot may be roughly divided into three stages, from the standpoint of mobility. In the first degree a certain amount of manual correction can be attained without eliciting pain; in the second, pain is always associated with such attempts, and in the third, no correction is allowed without an anæsthetic.

All types and degrees of this deformity can be benefited by present-day methods, while in mild and moderately severe cases the deformity can always be made to approximate the normal in appearance and function.

The treatment depends on (1) the age of patient, and (2) the nature of the deformity. Mechanical methods, manipulation, wedges, wrenches, et cetera, may be successfully used in practically all cases. The knife is used only as a last resort.

There are three steps in the corrective procedure: (1) correction of the over-pronated tarsus, (2) correction of the rotation of the bones of the ankle, and (3) correction of the equinus. As for the first step, cases taken before the patient walks can be reduced by manual means alone. In older cases it may seem expedient to divide the resisting fascia in order to hasten the process. The second step requires a wedge, and in older cases a wrench. When it comes to correction of the equinus, which is left to the last, tenotomy saves time and trouble. But the author considers it malpractice to tenotomize and simultaneously overcorrect in plaster. He advises open operation, with a suture bridge between the cut ends, and overcorrection 6 days later under anæsthesia.

Calcaneus requires a restoration of the arch, and correction of the superflexion of the foot. This, he says, seldom requires more radical measures than manipulation, supplemented if necessary by splints or braces. Severe cases may require tenotomy of the tibialis anticus, peroneus tertius, and extensor longus digitorum, one or all.

To prevent the deformities resulting from infantile paralysis, he advises that the limb be immobilized in plaster as soon as the diagnosis is made, and held for 6 to 8 weeks. Function should then be re-established, in proper apparatus, and restorative agents employed. In complete paralysis, tendon transplantation may be indicated but should be used with caution.

Old and neglected cases of club-foot practically always require surgical treatment, such as the Phelps operation, arthrodesis, or astraglectomy.

ALBERT EHRENFRIED.

Rugh, J. T.: *Paralytic Toe-Drop, Putti's Operation for Its Relief*. *Ann. Surg.*, Phila., 1914, lix, 432.  
By Surg., Gynec. & Obst.

Paralytic deformities of the foot may be corrected surgically by operation (1) on the bones, arthrodesis, (2) on the tendons, (3) on the skin, or (4) by the insertion of silk ligaments. Not every case is one for operation, for many paralyzed muscles recover power many years after the attack if strain is removed from them. Arthrodesis is liable to be functionally unsuccessful.

The surgery of the tendons for paralysis, introduced by Nicoladoni in 1881 is valuable in restoring function but is not always successful because of stretching of the parts. The resection of a portion of skin, as practiced by Robert Jones, is of some use in connection with tendon transplantation. The silk ligament insertion is highly recommended, but it is urged that living structures should be employed whenever possible instead of the foreign body.

An operation is described as performed by Putti, of Bologna, who utilizes the paralyzed anterior tendons instead of silk for paralytic toe-drop. The author reports a case successfully operated upon by this method and offers the additional suggestion that when the anterior tendons are so used their



distal ends should be fastened to the heads of the metatarsals to prevent deformity of the toes. The foot is brought to a right-angle position, the tendo achillis being cut if necessary. A five-inch incision is then made along the tibial crest, the tendons of the anterior group separated from each other and cut high at their muscular origin. The distal ends are then pulled through an oblong opening made in the tibial shaft, one from one side, one from the other alternately, brought across the front of the tibia and sutured to each other and to the periosteum.

W. A. CLARK.

**Test, F. C.: Sag-Foot and Taut-Foot.** *Chicago M. Recorder*, 1914, xxxvi, 153. By Surg., Gynec. & Obst.

The author laments the indiscriminate treatment of foot conditions with the commercial foot-plate, arch-support, etc. and presents a rational explanation and treatment for these very common conditions.

Sag-foot is a condition produced by a progressive muscular weakening, ligamentous stretching, and bone displacement, resulting in a sagging of the normal contour of the longitudinal arch with a resultant train of symptoms of which flat-foot is one of the last to appear.

Sagging of the arch may be due to an increase of the body weight, long continued standing resulting in muscular fatigue and disuse. In children it may be due to a rapid physical growth disproportionate to the muscular strength. The average commercial foot-brace is an incentive to muscular idleness and so directly furthers the disability.

The symptoms of sag-foot are characterized by foot discomfort, disinclination to stand, tender spots beneath the arch, a shuffling, heel-dragging gait and a gradual lowering of the inner side of the longitudinal arch.

The treatment consists of proper muscular exercises, suitable footwear with or without heel and sole alterations to assist in throwing the body weight to the outer sides of the feet—the more severe cases may require forced correction under anesthesia. Properly fitted arch-supports may be worn with advantage during weight-bearing, but should be gradually laid aside as the muscles become stronger through exercise.

Taut-foot is a term applied to that condition in which a shortening and contraction takes place in the calf muscles and plantar flexors of the foot, due to modern footwear; i. e., high-heeled shoes.

The raised heel causes the front part of the foot to be crowded forward in the shoe where the foot is broader than the shoe-sole, the little toe is lifted above the level of the others, the ligaments of the transverse arch stretch, the arch sinks, and the metatarsal heads impinge upon the shoe sole, causing pain and tenderness; and later, corns and calluses develop on the front part of the sole; the tendo achillis is contracted, as is also the plantar tendons and fascia, which may cause the longitudinal arch to be raised.

Discomfort from long standing or walking referred to the anterior or longitudinal arch, stiffness in gait, or more severe disability may result. The treatment consists of a gradual change from high- to low-heeled shoes, proper muscular exercises, and pads to support the anterior arch. Tenotomy of the tendo achillis, perineus longus, and brevis, and subcutaneous division of the bands of plantar fascia are often necessary.

ROBERT B. COFIELD.

**Griffith, J. D.: Progress of Orthopedic Surgery.** *J. Am. M. Ass.*, 1914, lxii, 748.

By Surg., Gynec. & Obst.

Griffith reviews the recent advances in orthopedic surgery clearly and concisely, including arthritis, poliomyelitis, congenital dislocation of the hip, operative treatment of Pott's disease, scoliosis, and abdominal visceroptosis. He believes that the bovine form of tubercle bacillus is the most dangerous, and is the variety that is principally transmitted by milk. Regarding serum therapy, he believes it has come to stay, being useful not only in closed but also in open tuberculosis.

Ely, Billings, Rosenow, Woodward, and Wallace are quoted regarding arthritis, and their theories are briefly reviewed. Howard and Clark are quoted as showing that the virus of poliomyelitis is carried by the house fly and the bedbug, but freeing the mosquito of any blame in this respect. He would have the patient, during the acute stage of this disease, rest in a plaster of Paris bed or some other form of splint to maintain the normal position of the affected members. Other treatment mentioned is tendon transplantation, arthodesis, nerve transplantation, and anastomosis; the last two are believed to be yet in the experimental stage.

The history of the treatment of congenital dislocation of the hip is traced from 1890, when Hoffa advised an open operation, down to the present time, with mention of Lorenz, Calot, and Hibbs. The number of complete functional and anatomical recoveries, he states, average 90 or 95 per cent in unilateral cases, and probably about 50 per cent in bilateral cases.

Regarding the operative treatment of Pott's disease, Griffith discusses the work of Hadra, Hibbs, and Albee, and believes the fracturing of the bases of the spinous processes, with credit to Hibbs, and the split processes with the transplanted tibia between, with credit to Albee, have been remarkably successful, but the time has not yet passed for final judgment. He thinks it is undoubtedly the best treatment for rapid recovery in Pott's disease.

Since its birth, orthopedics is said to have had scoliosis as a *bête noire*. Credit is given Abbott for the treatment offering the best results, and Goldthwait for the demonstration of the fact that correction, particularly of lateral scoliosis in the flexed position of the body, is due to unlocking of the articular processes of the vertebræ. Forbes' treatment, which aims at causing the correction of the deformity by the production of its counterpart,



and is undertaken by rotating the patient's thorax on a fixed pelvis in a direction toward the side of convexity of the curve, is commented upon, but no opinion is given regarding its success. The author

believes the last word in scoliosis has not yet been spoken. In conclusion the author briefly and pointedly discusses Goldthwait's views and treatment of abdominal visceroptosis. H. B. THOMAS.

## SURGERY OF THE SPINAL COLUMN AND CORD

**Baldwin, S. C.: Scoliosis.** *Northwest Med.*, 1914, vi, 38.  
By Surg., Gynec. & Obst.

After quoting various definitions of scoliosis, Baldwin concludes that scoliosis observed at any age in life is a lateral deviation accompanied by more or less torsion, and is a deformity of the whole body particularly affecting the spine.

Many causes of scoliosis have been observed; viz., shortening of a limb, results of severe burns, pleurisy, rib restriction, the habit of carrying children improperly over the arm, the carrying of heavy loads over the shoulder, and faulty position in sitting and standing. He emphasizes the fact that scoliosis is not a tubercular condition.

He elaborates on Wolf's law, that prolonged alteration in the function of a joint produces corresponding anatomical changes, stating that bone being the densest structure in the body, and being unyielding, is constructed according to the function it has to perform. The part pressed upon becomes atrophied and denser, while that relieved of weight becomes hypertrophied and loses its density, thus bringing about functional adaptability.

The diagnosis should not be difficult. A fixed or flexible spine must be determined, also how long it has existed, and the course determined before treatment is instituted if good results are to be secured.

In some cases the condition has been less improved by exercises. Braces and jackets have been used to correct the curves, but except in a few favorable cases, a cure is not to be expected.

Abbott's treatment, which is a fixation in plaster in the overcorrected position, has convinced the orthopedic profession of its value as a means of correction. A specially devised table is used. The patient is placed on a hammock in the frame and, by means of suitable bands, secured in position; the body is forced into the overcorrected position, after which it is fixed in plaster. Fenestra are cut in order that pads may be inserted between the cast and the body, as correction takes place.

The cast is worn for weeks or months until correction is obtained. The last stage of the treatment is the wearing of a removable celluloid jacket together with suitable exercises. JOHN H. SHAW.

**Barthe, E.: Typhoid Spondylitis** (La spondylite typhique). *Thèses de doc.*, Toulouse, 1914.  
By Journal de Chirurgie.

The first case, a patient of 22, had severe typhoid for two months. On recovery there was rigidity of the lumbar spinal column with slight left scoliosis; flexion of the column was impossible. There was

pain beginning in the lumbar column and passing around the crest in the pelvis, but no pain, of the lower limbs; the reflexes were normal. Radiography showed marked decrease in the intravertebral space between the second and third lumbar vertebræ with the formation of bony projections along the edges of the space. A plaster corset was applied for three months, and then a fresh one for three more months, with complete recovery. The spinal column was still rigid but there was no pain, and extensive movement was possible due to compensatory mobility of the adjacent vertebræ.

The second case was that of a cavalry lieutenant, who had a violent shock in the sacrococcygeal region from falling on his saddle. Three months later typhoid fever developed, followed by complete immobility of the spinal column with pain; no deviation was apparent; and there was no disturbance of motion or sensation in the lower limbs; reflexes were normal. Radiography showed erosion of the second and third lumbar vertebræ. Rest in bed for a month improved the condition but when the patient got up it became as bad as ever. A plaster cast was applied and the treatment kept up for a year. Recovery was complete and has persisted for 8 months. The lumbar column is still rigid but the adjacent vertebræ have acquired a compensatory mobility. Radiography shows bony projections uniting the lateral parts of the bodies of the two vertebræ; the intervertebral space is not diminished.

L. CAPETTE.

**Oppenheim, H. and Krause, F.: Successful Operation in Circumscribed Serofibrous Spinal Meningitis and a Study of Diseases of the Cauda** (Über erfolgreiche Operationen bei Meningitis spinalis chronica serofibrosa circumscripta, zugleich ein Beitrag zur Lehre von den Cauda-erkrankungen). *Mitt. a. d. Grenzgeb. d. Med. u. Chir.*, 1914, xxxvii, 545.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The authors bring out some interesting points in connection with three closely related cases. In the first case the cause was beyond doubt trauma. In the second, and especially the third case trauma may be assumed, particularly as there was no evidence of any other etiology. In all three cases it was the accumulated effect of several traumas.

The chief points in the symptomatology were alike in the first two cases. While the pain, as to location, character, and distribution, suggested sciatica, there were symptoms in both patients that excluded this possibility, especially bladder disturbances.

The chief interest in the cases was in the results



of surgical treatment. This consisted in the emptying out of the cerebrospinal fluid, the freeing of arachnoid adhesions, and the separation of a callus of the dura in the first case. The dura was left open, its edges sutured to the musculature and the wound in the soft parts hermetically closed. In spite of the dangerous location of the wound (paralysis of the bladder) both cases healed by first intention. Healing began in the first case on the second day, when the Achilles reflex, which had disappeared, reappeared. The third case was complicated by hysteria and morphinism and occasional rises in temperature and the diagnosis was therefore not quite clear. It was assumed that it was a case of an organic lesion in the region of the upper lumbar

vertebræ with contraction of the spinal canal and obstruction of the fluid, or an adhesive chronic serofibrous meningitis in connection with a meningeal hæmorrhage. It was doubtful whether the process was localized in the region of the medulla, the upper lumbar vertebræ, or the point of exit of the cord.

On laminectomy of the eleventh and twelfth thoracic vertebræ there was marked increase in the fluid and chronic arachnitis. After emptying the dura and keeping it open the wound healed promptly and there was improvement in the pains. Later the functional disturbances disappeared, but there were frequent recurrences for a while and then definite recovery.

HANS BRUN.

## SURGERY OF THE NERVOUS SYSTEM

**Coville: Spastic Paraplegia in Children Treated by Van Gehuchten's Root Section** (Observations de paraplégies spasmodiques infantiles traitées par la radicotomie suivant le procédé de Van Gehuchten. *Bull. et mém. Soc. de chir. de Par.*, 1913, xxxix, 1565. By Journal de Chirurgie.

Coville describes the following three cases of spastic paraplegia in children treated as above:

1. A child of 11 was afflicted with extreme spastic paraplegia of the lower limbs, and talipes equinovarus. The results of tenotomy were unsatisfactory, and Van Gehuchten's operation was performed, consisting of resection of the spinous processes and laminae of the twelfth dorsal, and first, second and third lumbar. There was an uneventful recovery. At the end of six months, after muscular re-education, the patient could walk with the aid of two canes; the position of the feet was normal.

2. The second case was that of a boy of 18 with spastic paraplegia of the lower limbs. A similar operation to the former case was performed, but at the end of a month the child began to cough and soon died of pulmonary tuberculosis.

3. The third case was a child of 10 who could not stand upright. There was extreme talipes equinus and the child was mentally defective. Operation was performed, followed by uneventful recovery. Muscular re-education was ineffective: the patient could stand upright but could not walk.

Coville comes to the following conclusions with regard to the operation: It is very simple technically and not at all dangerous, but it must be performed somewhat blindly, for though the topography of the roots to be operated on is known, it is impossible to tell whether too much or too little is being removed. The results are not so good as might have been expected from the published reports; for though the spasticity and the exaggeration of the reflexes disappear, relearning to walk is very difficult, the steps remain slow and hesitating, the limbs are heavy, stability uncertain, and with the lapse of time it seems that the good effects decrease rather than the opposite. Root section cannot compete

with purely orthopedic treatment in Little's disease and he believes that he was not persistent enough in the post-operative treatment. J. DUMONT.

**Antonini, L.: Bilateral Intrathoracic Resection of the Pneumogastric and Its Relation to the Pathogenesis of Round Ulcer of the Stomach** (La résection intra-thoracique latérale de pneumogastrique et ses rapports avec la pathogénie de l'ulcère rond de l'estomac). *Riforma med.*, 1914, No. 5, 116. By Journal de Chirurgie.

Antonini performed his experiments on rabbits, dogs, and cobras. He used Meltzer's method of anaesthesia as it presented the great advantage of immobilizing the animal and of preventing contractions of the diaphragm and respiratory movements. An incision was made in the seventh or eighth left intercostal space and the pleura opened, care being exercised to avoid injuring the lung. The right and left pneumogastrics were discovered and resected, at a height of 2 cm. in the rabbit and of five in the dog. Anaesthesia was discontinued only after the wound in the thoracic wall was completely closed. Forty experiments were made. There was no mortality among the dogs and only a slight one among the rabbits. He concludes as follows:

1. Bilateral intrathoracic resection of the pneumogastrics may, though rarely, produce a gastric ulcer with the macroscopic and microscopic characteristics of peptic ulcer in man.

2. This ulcer, which shows no tendency to heal, appears in dogs and rabbits in 7 per cent of cases.

3. Examinations were made 20, 25, and 50 days after operation without finding any tendency to healing.

4. Within the first few days after the operation there was great dilatation of the stomach, and vascular repletion accompanied by intragastric hæmorrhage.

5. In the animals killed five months after the operation there was no tendency to cicatrization, but a chronic ulcer.

6. The mechanism by which vagotomy produces ulcer is unknown.

CH. VILLANDRE.



## DISEASES AND SURGERY OF THE SKIN, FASCIA, APPENDAGES

**Plain, J. C.:** A Note on the Management of Burns. *Am. J. Surg.*, 1914, xxviii, 117.

By Surg., Gynec. & Obst.

There are four things to take into consideration in the treatment of burns: (1) To combat the shock if it exists; (2) to relieve the pain and nervous excitability; (3) to prevent infection and protect the exposed living tissue; and (4) to help nature in her work of repair.

The treatment of shock is just the same when it occurs from burns as when it arises from any other cause. To relieve the pain and nervous excitability the author gives a hypodermic injection of morphine and atropine. In addition he bathes the parts with cool water, at about 60° F., to which has been added a teaspoonful of bicarbonate of soda or sodium chloride to each quart of water. This bathing is kept up until the patient is more comfortable or until the hypodermic has had a chance to work. The prevention of infection is very important and should be given vigorous attention.

The author takes exception to two things which

are often recommended: (1) The opening of all blisters; and (2) the use of carron as a protective dressing. In opening a blister the denuded area is deprived of the non-irritating serum which is less irritating than any artificial medium and the dead epidermis becomes an irritant which favors infection. Carron oil and other similar preparations prevent proper drainage of the burn.

The author advocates the following care of a burn: The entire area and the surrounding parts are mopped or sprayed with hydrogen peroxide and then mopped with dry gauze. Strips of gauze which have been soaked in a 2 per cent solution of picric acid in dilute alcohol are then applied. Over this is applied a thin layer of cotton. This dressing is changed as often as it becomes soiled and each time it is changed the burn is cleansed as before. If sloughing occurs the dead tissue should be removed as rapidly as it becomes loosened. When the oozing has largely ceased, the author uses strips of rubber tissue which have been soaked in 1:1000 bichloride solution.

J. H. SKILES.

## MISCELLANEOUS

## CLINICAL ENTITIES — TUMORS, ULCERS, ABSCESES, ETC.

**Sutton, R. L.:** The Histogenesis of Multiple Basocellular Carcinoma. *J. Am. M. Ass.*, 1914, lxii, 977.

By Surg., Gynec. & Obst.

The author cites the various views of other writers as to the etiology of multiple basocellular carcinoma. He is of the opinion that the embryonal inclusion theory or the influence of the blood-vessels play no part in the etiology of this type of tumor. He rather sides with the views of Loeb and Sweek that the formation of carcinoma of the skin depends on a primary increase in the activity of certain parts of the epidermis. Sutton believes that a dry scaly skin predisposes to this condition.

Five case reports are given, the ages ranging between 23 and 73 years. In all these cases no "epithelial pearls" were formed and in the younger cases the tumor growths were superficial and thick, while in the older cases they infiltrated more deeply, as the reticulum was not as resistant.

The treatment should be excision; failing this, röntgenotherapy with or without freezing or cauterization.

EUGENE CARY.

**Binnie, J. F.:** Some Uses of Fat in Surgery. *Surg., Gynec. & Obst.*, 1914, xviii, 336.

By Surg., Gynec. & Obst.

In spite of its reputation as a tissue of poor resisting power, fat is well suited for transplantation. Sometimes its value is due to its connective-tissue basis but at other times its oily content is the

valuable element. The following are some of the uses of fat as a transplant:

1. It may be used as an organic plug or tampon to fill wounds in vascular parenchymatous organs, such as the liver, etc., or it may be spread like a plaster over a bleeding surface in the liver, kidney, or uterus as a hæmostatic agent. This use of fat is different from the application of free omental grafts to support the suture line in intestinal wounds or to surround and occlude the duodenum, as in the author's method of permanently obstructing the pylorus in certain cases after gastro-enterostomy.

2. Taking it for granted that adhesions will form or reform between the scalp, meninges, and brain after operations for traumatic epilepsy, the author has successfully followed Lexer's plan of implanting fat in the cranial defect. This implant does not prevent the formation of adhesions but the adhesions formed are calculated to be so loose and soft as to be harmless. Where a cerebral tumor or cyst has been removed and cerebral expansion does not quickly cause the cavity to disappear, a plug of fat may possibly be a suitable tampon with which to fill the cavity. The specific gravity of fat is somewhat less than that of cerebrospinal fluid.

3. Deforming depressed scars of the face may often be remedied by division of the adhesions between the skin and underlying bone, the depressed area being filled out or padded by the introduction of a suitable fragment of fat obtained from the patient himself.

4. After mastectomy for non-malignant disease

good cosmetic results have been obtained by the implantation of a lipoma (Czerny), a suitable mass of omentum obtained from a hernia (Judd), or fat obtained from any part of the body (Klapp, Hertzler).

5. When a cavity is formed in a bone by the removal of disease it may be obliterated by a free transplant of fat. This has been successfully accomplished by several surgeons, including the author.

6. Arthroplasty owes its success very largely to fat transplantation. Usually the flaps used are pedunculated, but to the author it seems that the rather complicated measures necessary to obtain pedunculated flaps may be found to be unnecessary, as free flaps may be as good or better than the pedunculated.

7. Fat is very useful in the prophylaxis of crippling adhesions following tenorrhaphy and neurorrhaphy.

8. In bronchiectasis, pulmonary tuberculosis, etc., the implantation of fat between the mobilized parietal pleura and the chest wall (Tuffier) is a valuable substitute for artificial pneumothorax or the Friedrich, Sauerbruch, and Wilms operations for producing collapse of the chest wall.

#### SERA, VACCINES, AND FERMENTS

**Rost, F. and Saito:** Use of Serologic Staphylococcus Reactions in Surgical Diagnosis (Die Verwendbarkeit der serologischen Staphylokokkenreaktionen in der chirurgischen Diagnostik). *Deutsche Ztschr. f. Chir.*, 1914, cxxvi, 320.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The authors regard Hohmuth's modification of the staphylolysin reaction as suitable for the diagnosis of surgical staphylococci. The staphylococci form a hæmolytic toxin in the body, the so-called staphylolysin. This can be demonstrated easily by adding to a bouillon culture of a certain alkalinity on about the tenth day of growth a suspension of red blood-cells of the rabbit. As a product of reaction to this lysin, antilyns are formed in the body. Neisser and Wechsberg tried to utilize the demonstration of these antilyns for diagnostic purposes. The patient's serum was mixed with the lysin in certain proportions and the red blood-cells of the rabbit added as an indicator. If hæmolysis occurred antilyns were not present in appreciable quantities. If hæmolysis was inhibited it was due to a strong antilynsic content of the serum; the latter, therefore may be assumed to have come from a patient with staphylococcosis. This reaction was unreliable because too little lysin was taken.

Hohmuth's reaction increases the amount of lysin and makes the diagnosis surer. Merck prepares a lysin already titrated so that the technique is very much simplified. It is only necessary to mix a certain amount of inactivated serum (0.5, 0.35, 0.25 and 0.1 in a solution of 1:10) and a 55 per cent suspension of rabbits' erythrocytes (0.5) and add to each tube the titer dose of the lysin. This method should be very useful in the diagnosis

of bone suppurations, especially for the differential diagnosis of osteomyelitis and tuberculosis. For some suppurations of the soft parts the agglutinin reaction can be used to advantage. Bactericidal attempts as well as the determination of the opsonic index are rejected for purposes of diagnosis.

WOLFSOHN.

**Wolfsohn, G.: Principles and Value of Vaccine Treatment** (Grundlagen und Wert der Vaccinetherapie). *Mitt. a. d. Grenzgeb. d. Med. u. Chir.*, 1913, xxvii, 72. By Journal de Chirurgie.

The author gives a comprehensive work on the principles, value, and methods of vaccine treatment, including treatment with killed bacteria and the products of their metabolism. He discusses controlling the effect and determining the dosage by reckoning the opsonic index by Wright's method. The indications are different in the three following groups:

1. In general bacteræmia, including almost all acute infectious diseases, sepsis, etc., vaccine treatment is useless or even harmful, and therefore contra-indicated.

2. This group comprises more or less localized foci, from which bacteria may pass over into the blood and which experience has shown that they sometimes do; (a) acute cases such as phlegmon, lymphangitis, osteomyelitis, peritonitis, peri- and parametritis, acute gonorrhœal arthritis, etc. Vaccine treatment is not absolutely contra-indicated but should be used in small and often repeated doses; (b) chronic cases, such as chronic colon infections of the urinary passages, tubercular peritonitis, tubercular inflammations of the bone, tubercular catarrh of the lungs, chronic osteomyelitis, chronic gonorrhœal arthritis, etc. Vaccine treatment is indicated in those cases in which with reasonable sureness auto-inoculation can be excluded by placing the diseased focus at rest; therefore, especially in diseases of the extremities, it is contra-indicated in cases where this is not possible, since if there is auto-inoculation it is impossible to give accurate dosage—for example, in many forms of pulmonary tuberculosis.

3. Strictly localized processes in which the bacteria or products of their metabolism do not pass into the blood; as for example, chronic staphylococcosis of the skin, skin tuberculosis, complications of gonorrhœa, etc., are cases in the domain of vaccine treatment. In practice, the control of vaccine treatment by the opsonic index is reserved for those chronic, strictly encapsulated foci of infection in which it is possible to completely exclude auto-inoculation and which from their location make exact clinical observation impossible. For the other cases this difficult method of control may be omitted. This simplifies the treatment markedly.

After a discussion of the preparation of the vaccines a special part is devoted to methods of use and results in different diseases. Autovaccination is not necessary in most of them: staphylococcus



infections, acne, sycosis, inflammation of the sweat glands, osteomyelitis, mastitis, pyæmia, furunculosis, chronic eczema, etc.

In suppurative acne and general furunculosis, vaccine treatment is a hopeful experiment; in recurrent inflammation of the sweat glands and of the nasal sinuses it frequently gives good results; in osteomyelitic fistulæ, purulent mastitis, and chronic sepsis, good results are only exceptionally obtained. Streptococcic infections are contra-indicated in the very acute cases, but are worth trying in the subacute and chronic cases.

Tuberculin is to be recommended for tuberculosis: (1) When any operation indicated, for some reason, cannot be carried out; (2) for after-treatment, especially after operations that cannot be performed radically; (3) as a supplementary treatment in encapsulated pulmonary tuberculosis, lupus, beginning arthritis, and lymphoma.

In gonorrhœa, vaccine treatment produces excellent results in acute and chronic arthritis, especially in combination with Bier's hyperæmia, good results in epididymitis, lack of uniformity in the results in pyosalpinx, failures in urethritis, endometritis, and conjunctivitis. Caution should be exercised in general infections. In gonorrhœa there is always strong reaction.

In colon infections, autogenous vaccines should always be used. There is severe reaction. Improvement was obtained by its use in many cases of colonuria, but not complete recovery. In chronic cystitis and pyelitis the vaccine treatment in conjunction with other methods hastened recovery, but in no case was the urine completely freed of bacteria.

FROMME.

**Cholzoff, B. N.: Surgical Gonorrhœal Diseases; Sero- and Vaccine Treatment** (Chirurgische Gonokokkenkrankungen. Sero- und Vaccino-therapie). *Beitr. z. klin. Chir.*, 1913, lxxxix, 382.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Faure-Beaulieu in 1906 published 34 cases in which cocci were found in the blood during life in general gonorrhœal diseases; the author adds 10 new cases from the literature and one of his own. The metastasis generally proceeds from the genito-urinary apparatus, sometimes from gonorrhœa of the eye. The conditions which bring about the general extension of the local process are as yet unknown.

In about two or three per cent of all gonorrhœal diseases there are complications in the joints, more rarely involvement of the tendon sheaths and still more rarely of the mucous bursæ, the pleura, and bones. Very rarely there is phlebitis from gonorrhœa. The other forms of general gonorrhœal infection are briefly mentioned. Cholzoff found only 11 cases of general gonorrhœal septicæmia in the literature, to which he adds the one of his own. He recommends as treatment, passive hyperæmia combined with douches of hot air, especially in involvement of the joints and tendon sheaths.

Serum treatment does no good in diseases of the mucous membranes, but gives good results in local complications, such as epididymitis, prostatitis, and cowperitis, and excellent results in diseases of the joints, tendon sheaths, pleura, etc. Ten cases which the author treated with sheep's serum were undoubtedly favorably influenced.

Good results were also obtained with horse serum, which has the advantage of not causing any general or local reaction, as the author observed in the 10 cases that he treated with horse serum. As to vaccine treatment, he recommends that it be begun with small doses in order to avoid reaction. This method of treatment gives good results without danger. In urethritis vaccine treatment is of no use. In diseases which are secondary through direct infection from the primarily diseased urethra, as in epididymitis, cowperitis, prostatitis, cystitis, and ureteropyelitis, vaccine treatment undoubtedly has a good effect, especially in epididymitis, while opinions are divided as to prostatitis. The author did not get uniform results. There was a marked effect in organs to which the infection was transmitted through the blood or lymph, such as joints, bones, tendon sheaths, etc., as he showed in the treatment of 36 cases.

The views as to the use of vaccine treatment in gonorrhœal septicæmia are divided. Three cases have thus far been treated, 2 of Dieulafoy's and one of the author's, with good results in all three.

VON HOLST.

## BLOOD

**M'Nee, J. W.: Experiments on Hæmolytic Icterus.** *J. Pathol. & Bacteriol.*, 1914, xviii, 325.

By Surg., Gynec. & Obst.

In recent years the theories on the production of hæmolytic icterus which have received most attention are those of Minkowski and Eppiger. The former holds that a disturbed function of liver-cells causes an aberrant flow of bile into the blood stream instead of along the bile-ducts, while Eppiger considers that the formation of gallenthromben, by causing obstruction, leads to dilation of the bile-ducts and rupture into the perivascular lymph-spaces.

M'Nee's experiments to control those published by Minkowski were carried out on geese, these fowls being especially suitable for the purpose. The geese were poisoned with AsH<sub>3</sub> and immediately the liver was removed with the exception of a small stump of liver tissue left behind the vena cava. These geese lived several hours after operation. His conclusions are as follows:

1. There is no doubt that after the removal of the liver, in geese poisoned with AsH<sub>3</sub>, no marked icterus occurs. The weak icterus occurring in some of the experiments after removal of the liver must depend either on the functional activity of the spleen and bone-marrow, or on continued activity of the small piece of liver left behind the vena cava.

2. The reason why no marked icterus follows



extirpation of the liver is not that the liver-cells have been removed, but it depends upon the removal of the tissue enclosed within the liver which breaks down hæmoglobin—namely, the endothelial cells of Von Kupffer. These cells have to do, at any rate, with the first phase in the production of bile, since they split off the iron part of the hæmoglobin molecule and set free the pigment portion.

3. Neither from the experiments of Minkowski and Naumyn, nor from the author's may a definite conclusion be drawn that a true hæmolytic icterus can not occur at all. On the contrary, the histological appearances, especially the proliferation and desquamation of the Kupffer cells, their circulation in the blood stream, and their destruction there, speak strongly in favor of the occurrence of an icterus without any action of the liver-cell at all. The argument that when the liver is removed the homologous endothelial cells in the spleen and marrow do not take up the work is met by the extreme smallness of these latter organs in birds and the short duration of the experiments.

4. An important question is how far these conclusions arrived at by experiments on geese can be applied to human pathology. Experiments show that the structure of the liver in birds is different from that in higher animals. In birds there is a very special iron metabolism in the liver with which, not the liver-cells, but the endothelial cells lining the vascular capillaries, have to do.

To compare with these experiments on geese the appearances produced in hæmolytic icterus in higher animals, dogs were poisoned with toluylenediamine to bring about jaundice. The results were found to be in no way essentially different from those observed in geese. It is to be noted, however, that the normal structure of dog's liver is different from that of birds. In dogs the endothelial Kupffer cells are much less numerous, and normally give no iron reaction; in dogs the liver does not seem to be so directly associated with the iron metabolism as it is in birds. It is likely that in higher animals the spleen has taken on this function. In icterus, the endothelial cells of the dog's liver show changes quite similar to those found in geese; namely, phagocytosis of red blood corpuscles, disintegration of them, and appearance of a diffuse iron reaction in the protoplasm. The cells being much fewer in number, these appearances are not so prominent and readily recognized. In the spleen the changes seen in dogs and geese during icterus are also similar, but it has already been sufficiently emphasized how much larger the spleen is comparatively in higher animals than in birds. In the lymphatic glands of dogs the changes are also very marked, and are of a similar nature to those found in the spleen. In the geese it was generally difficult to find lymphatic glands, hence no observations were made on them.

Taking all these points into consideration, it seems quite probable that all that has been suggested in connection with the etiology of hæmolytic

jaundice in geese can be applied to higher animals and to man.

LEO. G. DWAN.

**Wallace, R.: Post-Operative Thrombophlebitis.**

*Am. J. Surg.*, 1914, xxviii, 103.

By Surg., Gynec. & Obst.

Thrombophlebitis follows in 1.2 per cent of all abdominal operations, the veins chiefly involved being the external iliac, the common iliac, the femoral, the saphenous, the mesenteric, and the portal. A study of the statistics in a large series of cases makes clear the following definite facts: Post-operative thrombophlebitis occurs almost exclusively after abdominal operations; it occurs frequently in clean cases; it occurs in about one-third of all statistical cases in myomectomies; in the majority of cases it occurs in the femoral vein and on the left side.

It is doubtful whether any one cause can be ascribed in all cases, but certain predisposing physiological factors are always present: The peripheral venous circulation is comparatively sluggish; the venous coats are thin and easily permeable; their superficial distribution submits the veins to outside injury; venous blood presents a greater coagulability.

Kelling concludes from experimental work that infection in the natural clot behind a ligature or traveling from stitch abscesses through the epigastric veins is the prime cause, while Clark believes that traumatism of the deep epigastric vein causes the primary thrombosis which progresses to the external iliac. The author believes there are two primary factors, viz., traumatism of the abdominal wall and infection of the incision, and concludes from a consideration of the clinical symptoms that these two theories are wholly tenable. He accounts for the preponderance of left femoral vein thrombosis by bacterial colonies gaining the arterial circulation and eventually reaching a traumatized or diseased vein wall.

The preventive treatment may be summed up in strict asepsis, the avoidance of trauma and of long dead spaces within the vessels, preliminary treatment of subjects with flabby musculature by massage, early bowel action, and frequent change of position. But there will still remain a few cases, due to unavoidable endovenous infection, against which there is at present no available means of prophylaxis.

E. K. ARMSTRONG.

**BLOOD AND LYMPH VESSELS**

**Kempe, G.: Brachial Arteriovenous Aneurism Treated by Vascular Suture.** *Proc. Roy. Soc. Med.*, 1914, vii, Surg. Sect., 83.

*Med.*, 1914, vii, Surg. Sect., 83.

By Surg., Gynec. & Obst.

The patient, who was 56 years old, for two years had noticed a stinging sensation in his right arm. Inspection showed a large pulsating swelling in the arm just below the anterior axillary fold and in the line of the brachial artery. It was increasing in size, but was not painful. The swelling was soft and



compressible and pulsated regularly. A thrill, which was easily felt, was a continuous one, but had a systolic increase in intensity. The swelling could be traced into the axilla, and a soft pulsating swelling was found beneath the right clavicle, where a similar thrill could be felt, but less marked than in the arm. Pressure on the subclavian artery above the clavicle caused a collapse of both swellings and a cessation of the thrill. Release of the pressure caused the swellings to fill up slowly, but they required several pulsations to become as full as before. Pulsation in any of the superficial veins of the arm, forearm, or thorax could not be detected. The influence of respiration on the swellings was not noticed. The right radial pulse was less full than, and in time rather behind, the left. A humming, low-pitched bruit, with high-pitched systolic accentuations, could be heard over the swelling. There was no evidence of intrathoracic aneurism.

The case was typically one of arteriovenous aneurism. A dissection showed a communication between the upper part of the brachial artery and the inner of the venæ comites. The parts were cleaned and the artery and vein were clamped separately above and below the anastomosis, the connection between the two being then severed. The arterial opening was closed with two layers of fine sutures, 000 silk and a round needle being used. The opening into the vein was closed with 00 catgut.

The after-treatment was rest in bed and morphia. A good result was obtained. The radial pulse on the affected side was ultimately weaker and the blood-pressure was 20 mm. Hg. less than on the sound side. The author thinks that laminated fibrin was laid down over the arterial suture and this resulted either in closing the artery completely or considerably narrowing it.

J. H. SKILES.

**Meyer, F.: Treatment of Varicose Veins by Rindfleisch-Friedel's Method and Its Results** (Die Behandlung des varikösen Symptomenkomplexes nach Rindfleisch-Friedel und deren Erfolge). *Beitr. z. klin. Chir.*, 1914, lxxxix, 276.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The operation was performed on 24 patients, on both legs in 6 of them. The technique was as originally described. The chief emphasis is laid on the wide separation of the edges of the wound and as numerous ligations of the veins as possible in order to avoid secondary hæmorrhages. The dressing consists of tamponing, pressure bandage, and elevation of the limb. There is pain for the first few days and on the first changes of dressing. One of the chief points in the after-treatment is to delay healing by removing the new granulations every second day. The spiral incision is begun above or below the knee according to the extent of the varices. The saphena should be incised and ligated several times.

The results of this method are due to the almost complete annihilation of blood and vessel wall pressure by interrupting the course of various veins,

and to the removal of fluid from the region operated on by the opening of lymph and tissue spaces and to the disappearance of all symptoms of inflammation. The duration of the treatment varies from 6 weeks to over a year. Eighteen of the patients had ulcer of the leg and in addition to the operation the ulcers were incised. There was definite cure in 54.16 per cent, persisting after a year in 41.66 per cent. In some of those that were not cured there was no marked dilatation of the superficial veins, so that varices of the deep vessels were suspected. Parona recommends in such cases the ligation of the popliteal vein. The results are much better in pure varices. All 6 of the patients were cured and remained so a year after. WEICHERT.

**Sherrill, J. G.: Direct Suture of the Brachial Artery for Traumatism; Restoration of Circulation; Subsequent Development of Ischæmic Paralysis.** *Old Dominion J.*, 1914, xvii, 113.

By Surg., Gynec. & Obst.

The following case of ischæmic paralysis is reported by the author:

A young man, 23 years of age, had his arm caught and twisted in a centrifugal machine, in such a way that a backward dislocation resulted at the elbow. When seen, an hour later, he complained greatly of pain; there was a marked purple swelling in the forearm and the radial pulse was absent; there were no symptoms of a false aneurism; both bones of the forearm were dislocated backward, but the skin was unbroken. After three hours' treatment, there was no improvement in the circulation, but the pain, swelling, and discoloration increased. At operation the humerus, which was lying in front of the coronoid process of the ulna, was restored to its position. The ends of the brachial artery stood forth prominently in the wound, both being filled with blood-clots, no fresh blood being present. The clots were removed and a Crile clamp placed on the distal and proximal ends of the vessel. The sheath of the artery was torn away from the distal portion and had contracted somewhat over the proximal end. This was held out of the way while the vessel itself was sutured. The method of Carrel was employed. The median nerve was exposed in the wound, but was apparently uninjured. The skin was closed without drainage and the arm put up in partial flexion. Within five minutes after the vessel was sutured, circulation had returned in the hand, although the radial pulse was not felt. Later it was fully restored.

The patient made a somewhat protracted convalescence and was disturbed some by numbness in the fingers, which was thought to have resulted from stretching the median nerve. In dressing the arm great care was used to prevent constriction of the circulation. The patient had some slight impairment of motion at the elbow and also partial interference with pronation and supination. A contracture took place in the forearm and hand which simulated that resulting from ulnar paralysis.



Early, forcible correction of the deformity was accomplished, but always with considerable pain to the patient. Subsequently, the wrist became more firmly fixed and the tendons contracted so that attempts at restoration were ineffective. Heat sensation also was absent. At a subsequent operation the ulnar nerve was found to be normal and the contracted tendons were cut. Slight improvement was noted in the sensation of the fingers and the deformity was considerably less. The electrical findings showed degeneration of the ulnar nerve and muscles of the forearm and hand. Massage, the application of heat, passive motion, and the employment of electrical stimulation have all been used on this patient.

The author discusses the case and concludes that the ischæmic atrophy and paralysis may occur as a result of arterial interruption, which must be nearly or quite complete and usually of over two or three hours' duration.

EDWARD L. CORNELL.

### POISONS

**Lukas, J.: Presence of Tetanus Germs in the Excrement of Horses** (Über das Vorkommen der Tetanuskeime in den Exkrementen des Pferdes). *Ztschr. f. Tiermed.*, 1914, xviii, 17.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Among 17 horses the author found tetanus spores in the excrement of 16, which confirms the results of his previous experiments showing that tetanus germs are almost always discharged with the feces of our large domestic animals; this explains their wide distribution. Lukas gives his own experience in growing the bacilli with independent improvements in the method. He calls attention to the pseudo forms of the tetanus bacillus which cannot be distinguished from the true Nicolaier-Kitasato type morphologically, but only by animal experimentation.

KREUTER.

**Franz, V.: Intravenous Injection of Corrosive Sublimite in Septic Diseases** (Über intravenöse Sublimatinjektionen bei septischen Erkrankungen). *Beitr. z. klin. Chir.*, 1914, lxxxviii.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Franz experimented in 20 cases with intravenous injections of 1:1000 bichloride solution in doses of 10 ccm., containing, therefore, 0.01 bichloride per dose. There was one anthrax infection and 19 streptococcus, staphylococcus and colon septic pyæmias, 7 of them being puerperal general infections.

The blood examination showed streptococci in 8 cases. In 2 of these cases the bichloride injections had no effect, while in the other 6 cases the bacteria disappeared from the blood after the second or third injection; 5 of the cases recovered while the sixth died of liver abscess. Of the 11 cases with negative blood findings, 5 died, among them 3 cases of puerperal infection. Even in the 6 cases which recovered Franz thinks the beneficial effect of the bichloride was questionable.

In the anthrax case which recovered, no bacteria were demonstrated in the blood. After the first injection the temperature sank and improvement began, but Franz does not feel sure that the improvement was due to the bichloride. He thinks that it is definitely beneficial only in the cases of bacteræmia, and in such cases he thinks it worth trying when other harmless methods fail. Great caution should be exercised, however, in the use of such injection, as it is by no means harmless and should be used only when there are special indications.

There were no serious by-effects in any of the author's cases. The blood was not harmed in any way by the 1:1000 solution. Even when 4.6 cg. was used within 72 hours and 8 cg. within 192 hours there was no injury to the kidneys, but in 50 per cent of the cases there was diarrhoea and pain in the abdomen. In the fatal cases the bichloride was never the cause of death.

M. VON BRUNN.

### SURGICAL THERAPEUTICS

**Kolbé: Intravenous Treatment of Hydatid Cyst by Arsenobenzol** (Le traitement intra-veineux du kyste hydatique par l'arsénobenzol). *Prog. med.*, 1914, xlii, 103. By Journal de Chirurgie.

In a paper read before the Society of Comparative Pathology Kolbé gave a suggestive and interesting paper on the treatment of hydatid cyst with arsenobenzol—salvarsan, or even better neosalvarsan, or similar preparations. He showed the dangers of echinococcus infection and pointed out the fact that sometimes, though rarely, recovery takes place by spontaneous aseptic absorption of the cyst; the ideal treatment, therefore, would be to bring about this curative process by some simple means, or to destroy the embryos before the cystic period. He suggests utilizing for this purpose the parasitocidal effect of arsenobenzol, which has already been demonstrated on spirilla, trypanosomes, filaria, etc. It is logical, therefore, to count on its sterilizing effect on cestodes especially tænia echinococcus. This is no longer a mere hypothesis, for it has been confirmed in two cases by Prof. Roux of Lausanne. Kolbé reports these cases in detail. In both cases a week after an intravenous injection of arsenobenzol there was a rise of temperature and the discharge through an incision of a turbid cystic fluid, slightly purulent, and the vesicles showed necrosis.

There is some danger in the sudden necrosis of large cysts followed by suppuration; therefore it becomes important to diagnose the presence of echinococcus early, before the surgical period. Among the new laboratory methods for accomplishing this purpose may be mentioned radiology, which, though still imperfect, aids greatly in the early diagnosis of hydatid cyst of the lung and liver. Gradually the absolute and relative indications for the use of arsenobenzol will be established and in order to establish them experiments should be performed on domestic animals spontaneously or



voluntarily infected with echinococcus. By means of such experiments it may become possible to sterilize the dog and cat against echinococcus, for it is well known that they are the most dangerous agents in propagating it. In the discussion Weinberg of the Pasteur Institute of Paris declared that recently one of his colleagues had succeeded in making cysticerci in rabbits disappear by the injection of modified 606, which confirms the new therapeutic method experimentally.

J. OKINCZYK.

**Schiassi, B.: New Physiological Solutions** (Nouvelles solutions physiologiques). *Semaine méd.*, 1913, xxx, 589. By Journal de Chirurgie.

It is admitted that the so-called physiological solution of 0.75 per cent sodium chloride, given for the purpose of overcoming intoxication, on the contrary often aggravates the condition of the patient. In some cases after the administration of this saline solution there is an increase in blood-pressure and diuresis, but sometimes there are signs of progressive and irremediable adynamia. The sodium chloride absorbed from the solution causes an impoverishment of the cellular elements of the tissues, depriving the nerve tissue especially of calcium and potassium, the calcium sometimes being decreased fifty per cent. As calcium has a tonic effect on the nervous system, it may readily be seen that copious injections of saline solution might depress the nervous system. Moreover, this degree of concentration of sodium chloride may injure the kidneys, on which the work of elimination devolves.

Therefore Schiassi has devised two new physiological solutions, one for subcutaneous and intravenous injection, the other for rectal installation by the drop method. They are to some extent a combination of Ringer's and Locke's solutions and the amount of sodium chloride is markedly decreased — (6.50 per 1000 instead of 7.50 per 1000); in place of the sodium chloride a certain amount of potassium is added and also of calcium, which in addition to its tonic properties facilitates coagula-

tion of the blood, which may be of great service in surgical diseases. He has also increased the amount of bicarbonate of soda, for in surgical patients symptoms of acidosis are often observed, and it seemed wise, in order to neutralize this acidosis, to increase the alkaline resources of the body. Glucose is diuretic, energy-producing, nutritive, and a cardiac tonic. The following are the formulas of the two solutions:

For hypodermic and intravenous injection—

Pure sodium chloride.....	6.50 gr.
Potassium chloride.....	0.30 gr.
Calcium chloride.....	1.00 gr.
Sodium bicarbonate.....	0.50 gr.
Glucose.....	1.50 gr.
Distilled water.....	1000 gr.

For rectal injection by the drop method—

Sodium chloride.....	6.50 gr.
Potassium chloride.....	0.30 gr.
Calcium chloride.....	1.00 gr.
Bicarbonate of soda.....	0.50 gr.
Glucose.....	50.00 gr.
Pure ethyl alcohol.....	15.00 gr.
Distilled water.....	1000 gr.

The large glucose content of the last solution is noteworthy; this is of advantage when absorbed, though the direct injection of such large quantities of glucose into the circulation would be more dangerous than useful. In general, the author believes that rectal absorption should be utilized more generally in surgery than it now is for two reasons: (1) Liquids introduced per rectum undergo transformation in the portal system and are used only after they have been reduced to meet the physiological needs of the body; (2) by this means the patient effects a sort of auto-absorption of exactly the amount of liquid that he needs.

The ethyl alcohol, mentioned in the second solution, in small doses favors the penetration of liquids through the intestinal walls and increases the diffusibility of the solution.

J. DUMONT.

## GYNECOLOGY

### UTERUS

**Smith, W. S.: The Early Recognition and Practical Prevention of Uterine Cancer.** *Md. M. J.*, 1914, lvii, 69. By Surg., Gynec. & Obst.

The author calls attention to the appalling prevalence of this scourge. A careful estimate has placed the number of deaths from cancer in the United States at 80,000 annually. He deplors the fact that in the past so little attention has been given to the early diagnosis of cancer.

Hæmorrhage, leucorrhœa, or pain, especially in women between 35 and 60 years, furnish sufficient reason for a careful physical examination, followed, if necessary, by a prompt resort to the microscope.

An interesting point in connection with cancerous nodules of the cervix is that the mucous membrane which overlies them is not alone congested, but upon palpation it seems glued to the structures beneath and does not glide readily over them, as in the normal and benign conditions. The author believes this analogous to the retraction and dimpling of the skin in cancer of the breast.

The author believes with Bossi that the proper treatment of cervical lacerations, endocervicitis, and endometritis would prevent many cases of cancer. A really humanitarian and clinically scientific work would be a propaganda for the prophylaxis of cancer of the uterus by timely, systematic, and persevering surgical treatment of benign affections of the cervix and uterine cavity.

C. H. DAVIS.

**Tauffer, W.: Treatment of Uterine Cancer with Radium; with Demonstration of Specimens** (Über Heilungsversuche mit Radium bei Gebärmutterkrebs mit Demonstrationen). *Sitzungsb. d. Budapest. k. Ärzte.*, 1913, ii, 437. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author gives a list of the numerous points that are still undecided in radium treatment and concludes that in spite of the many questions and doubts in regard to it, it is still a beneficent method of treatment, and experiments in its use should be extended by the state, society, and physicians. With previous methods of treatment only 20 per cent of the patients suffering from uterine cancer had any chance of recovery. The other 80 per cent were hopeless, but with radium astonishing effects have been produced. The hæmorrhage stops in a few days, also the odor, the discharge and the terrible pains; restful sleep is reestablished, as well as appetite and cheerfulness and the patients resume hope. In the tumors treated with radium there is not only interstitial cicatrization but destruction of

cancer-nests, so it may be hoped that the cure will be permanent. But even if actual recovery is not obtained, radium at least frees the patient from great suffering and makes the disease more endurable.

HORVÁTH.

**Wertheim: Radium Treatment of Cancer of the Uterus** (Radiumbehandlung des Gebärmutterkrebses). *Wien. klin. Wchnschr.*, 1913, xxvi, 1648. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports 19 cases of his own of carcinoma of the uterus, 9 of which were operable, 1 a border-line case, and 9 inoperable. They were treated with large doses of radium and mesothorium with strong filtration. Among the 9 inoperable cases there were no brilliant results; complete disappearance of the tumor occurred only in cases of superficial carcinoma.

Wertheim believes he could have secured as good results from excochleation, cauterization, or vaginal amputation of the cervix. While there was not a satisfactory deep effect in the cases that were later examined microscopically, there was considerable injury observed in a number of cases, consisting of general weakness, emaciation, weakness of the heart, headaches, diarrhœa, rises of temperature, conditions of excitement, and sleeplessness. There were other injuries of a local nature, such as necrosis of the tissues, which was not always limited to the site of the diseased focus, infiltration of the pelvic connective tissue, thickening of the peritoneum, inflammation of the lower bowel, disturbances in the function of the bladder, and more or less severe pain. He believes that these injuries can be very much reduced by means of adequate technique, especially with sufficient filtration, but with large doses even strong filtration cannot entirely overcome such harmful effects, and he believes that the radical operation may be made considerably more difficult after radium and mesothorium treatment, and that it will show a greater mortality.

The operation is rendered more difficult by the infiltration, the hyperæmia and sclerosis of the pelvic connective tissue, while the changes in the general condition make the prognosis considerably worse.

For future work the author recommends lead filters 1-2 mm. thick for the part to be irradiated, 2-3 mm. thick for the surrounding region, and 10 to 20 layers of gummed paper to guard against secondary rays. He intends to give up large doses entirely, and apply continuously not more than 3000 milligram hours, with several days' intervals between.

LEMBCKE.



**Schauta, F.:** Experience in the Gynecological Clinic with Radium and Mesothorium in the Treatment of Cancer (Die bisherigen Erfahrungen der I. Frauenklinik mit Radium und mesothorium bei Krebs). *Wien. med. Wchnschr.*, 1913, lxi, 2953. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author has noted in addition to the favorable local effect on the cancer, sometimes to the extent of complete disappearance, severe general effects during the application; also hæmorrhage in two cases, a vesico-vaginal fistula in one and a recto-vaginal fistula in one. Operable cases should be advised to have operation and after-treatment with radium; severe and inoperable cases should be given radium treatment, unless they show severe degrees of cachexia or complete involvement of the vesico-vaginal and rectovaginal septa. Method of treatment: three applications of 40-50 mg. radium, each lasting 5 days, with intervals of ten days; 100 mg. or more should be used only in exceptional cases and then applied only for a short time. Real cures can as yet not be reported. WÖSSNER.

**Glynn, E. and Bell, W. B.:** Rhabdomyosarcoma of the Uterus. *J. Obst. & Gynec. Brit. Emp.*, 1914, xxv, 1. By Surg., Gynec. & Obst.

The authors give a treatise on this rare neoplasm, based on two recent cases, with a review of 18 cases previously reported.

A pathological description reveals a very complex tumor. The transversely striated muscle-cells are very few and form only a small portion of the growth, small spindle and round cells being present, sometimes forming a stroma for the larger muscle-cells. Other elements are (1) multinucleated cells or sarco blasts, noted in 5 cases; (2) myxomatous tissue, in 7 cases; (3) cartilage, 5 cases; (4) gland tissue, 6 cases. These neoplasms come under the category of mesodermal mixed tumors and probably arise from displacements of embryonic mesodermal tissue from the lumbar region during early foetal life. While the glandular elements may be derived from the Müllerian ducts, it is more probable that they are persisting uterine glands and may undergo collateral hyperplasia or even carcinomatous degeneration. CAREY CULBERTSON.

**Kolde, W.:** Myxosarcoma of the Uterus (Über Myxosarcoma uteri). *Arch. f. Gynäk.*, 1913, ci, 181. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author points out the extreme rarity of myxosarcoma of the uterus; if the distinction is made between true myxosarcoma and sarcoma with secondary myxomatous degeneration, Meyer holds there are only two cases in the literature. The case reported is a myxomatous fibrosarcoma of the uterus in a woman 42 years old, who had been suffering from severe hæmorrhage. The whole uterine cavity was filled with a soft tumor originating from the body of the uterus. Macroscopically it was seen to be made up of connective tissue and muscular

bands, distended with a mucous substance; microscopically the connective-tissue basis of the tumor looked in some places like fibroma, in others like spindle-celled sarcoma. Staining with thionine decided the diagnosis; the wall of the uterus was stained bright blue; narrow bright blue processes extended from it, which contained areas of varying size that were colored violet, which is the staining reaction of mucous. METTIN.

**Bretschneider:** Myomatous Uterus Treated with Röntgen Rays (Mit Röntgenstrahlen behandelter myomatöser Uterus). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 135.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author presented a specimen obtained on operation, a myoma as large as an ostrich egg from the posterior wall of the uterus, and projecting partially into the cavity of the uterus. Also several small myomata. The ovaries were also removed. They were not atrophied and on section showed numerous spots grayish yellow and varying in size from the head of a pin to that of a hemp seed; they were not sharply circumscribed. The specimen came from a patient who had had twenty röntgen-ray treatments. As there had been no results the patient demanded operation.

The author leaves unsettled the question as to whether the case was a failure of röntgen treatment. From his experience he does not see why the operative treatment of myoma of the uterus should be given up. Among 104 operations for myoma he lost one patient. He opposes röntgen treatment chiefly because among 180 cases he found 8 cases of malignant degeneration of the myoma. He regards a myoma as not cured when, after irradiation, a large tumor still remains. RUNGE.

**Sippel, A.:** Treatment of Myomata of the Uterus with Röntgen Rays (Die Behandlung der Uterus-myome mit Röntgenstrahlen). *München. med. Wchnschr.*, 1913, lx, 2226.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author discusses the 6 cases of myoma of the uterus that he has treated with röntgen rays in the past six and one-half months, following Albers-Schönberg's method, with the exception that he used a shorter focal distance and a 3 mm. aluminum filter. He is not convinced of the harmlessness of Gauss' method of giving large doses. The effect of the milder irradiation is slower than that of the intense irradiation, but it is effective, and moreover the results of the first method have extended over a period of five years, so we are in a position to form a better judgment as to distant results.

The chief indications for irradiation are found in those myomata that cause severe hæmorrhage by developing toward the cavity of the uterus and the mucosa. Young women need much larger doses than women nearing the climacteric. It must be borne in mind also that even when amenorrhœa is attained the myoma cells are not destroyed, and that



these patients must be kept under observation. Operative treatment is still indicated for all cases that are not suitable for irradiation. If the proliferative myoma cells are accessible to the specific effect of the röntgen rays the indications for irradiation must be extended.

LOHFELDT.

**Newnham, W. H. C.: Fibroid Uterus.** *Bristol Med.-Chir. J.*, 1914, xxxii, 37.

By Surg., Gynec. & Obst.

The author recommends Baer's method of supra-vaginal hysterectomy as the safest and easiest operation for uterine fibroids. The possibility of cancer occurring in the vaginal stump is slight. He states that the strongest advocates of total hysterectomy for fibroids are probably those who have had but a limited experience. One or both ovaries should be preserved, as the severity of artificial menopause is prevented and marital relations are not interfered with. The author does not believe that the menopause has any tendency to cause fibroids to disappear. Rather, he thinks that it causes them to grow faster.

He advises the removal of the fibroid as soon as it is recognized. The complications which may arise in an unoperated case are then briefly discussed. In a series of 119 operations, there was but one death.

EDWARD L. CORNELL.

**Wagner, J.: Removal of a Submucous Fibroid under Local Anæsthesia.** *Internat. J. Surg.*, 1914, xxvii, 81.

By Surg., Gynec. & Obst.

The author's belief is that many operations can easily be done under local anæsthesia, especially around the rectum, vagina, and extremities.

The case operated was that of a woman 51 years old. She had been suffering from diabetes for 10 years. For 3 years past she had been flowing excessively, passing many clots. For the last month the flow has been continuous, causing great weakness and anæmia. On examination the cervix was found dilated two finger's-breadth, and in the os a protruding mass could be palpated. Operation for a submucous fibroid was advised.

Preceding the operation, one-quarter grain of morphia was given. The local anæsthetic was hemesia, Lynch's preparation. This was injected around the cervix and into the uterus for about two inches after which an anterior hysterotomy was done. The fibroid arising from the fundus was enucleated, and the uterus packed. At no time during the operation did the patient feel any pain.

EUGENE CARY.

**Béclère: Röntgen Treatment of Myoma of the Uterus** (Die Röntgentherapie der Uterusmyome). *Fortachr. a. d. Geb. d. röntgenstrahl.*, 1913, xxi, 284.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Béclère reports the cases that he has treated in his private practice. He began at the end of 1908 to treat myomata of the uterus with röntgen rays and since that time has scarcely changed his technique.

Generally he gives one treatment a week, each treatment consisting of at least two irradiations, one on the right and the other on the left of the midline of the abdomen with a lead glass tube 10 cm. in diameter. Among 60 patients with clinically demonstrable myomata, the uterus decreased more or less in size in 58. Two had already passed the climacteric; in 56 the menses disappeared during the treatment. In two patients the menses did not completely stop.

The average duration of treatment was three months. It was the exception for the menses to appear more than twice after the beginning of treatment. The greatest importance in prognosis is to be attributed to the decrease in size of the myoma, and the author concludes that in treating myomata with röntgen rays the direct effect of the rays on the myomatous tissue should be sought for rather than their effect on the ovaries.

HIRSCH.

**Heimann, F.: Irradiation of Carcinoma of the Uterus** (Zur Strahlenbehandlung der Uteruscarcinome). *Berl. klin. Wchnschr.*, 1914, li, 12.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Among 18 inoperable carcinomata of the uterus, 5 of which should be excluded, 6 were markedly influenced by the combined method of mesothorium and röntgen irradiation; the putrid crater disappeared and the cervix was covered with epithelium. Seven that are still under treatment have greatly improved; the hæmorrhage has stopped, the secretion lessened, the crater grown smaller and the weight increased. Although no carcinoma can now be demonstrated at its former site, it cannot be definitely asserted that recovery has taken place. The technique is as follows: thirty mg. mesothorium, enclosed in a tube lined with 2 mm. of silver, is filtered through 3 mm. of lead and applied for 168 hours. Then a rest of 3 to 6 weeks is given, followed by 7 days' application again. The röntgen irradiation is given vaginally and abdominally, 40 to 50 times, 25 X at a sitting. Effects may be expected 3 to 4 weeks after the first series of irradiations.

DORN.

**Beckmann, W.: Cystic Fibromyoma of the Uterus** (Über cystische Fibromyome des Uterus). *St. Petersb. med. Ztschr.*, 1913, xxxviii, 323.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Beckmann discusses cystic myoma, based on three cases that he operated upon successfully. Three forms can be distinguished from the pathological anatomy; (1) Cyst formation as the result of necrotic degeneration of a myoma; (2) Lymphangiectatic cystic myoma; (3) Cystic adenomyoma.

Cystic degeneration of myomata sometimes causes an acute illness that resembles the symptom-complex caused by torsion of the pedicle of ovarian tumors. Fever often arises as the result of absorption and auto-intoxication. Sometimes there is fluctuation, which may lead to a mistaken diagnosis of ovarian tumor. Treatment is operative; röntgen treatment may even cause the condition to grow worse.

HANNES.



**Weishaupt, E.: Eosinophilic Leucocytes in Inflammatory Infiltration, Especially in Carcinoma of the Uterus Treated with and without Irradiation** (Über eosinophile Leukocyten in entzündlichen Infiltraten, besonders der mit und ohne Strahlentherapie vorbehandelten Uteruscarcinome). *Arch. f. Gynäk.*, 1913, ci, 489.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The examination for local increase of eosinophilic leucocytes showed positive results in 59.3 per cent of the cases, most of them carcinoma of the female genitalia. In other tumors and in inflamed tissues there was a local increase of eosinophiles in only 20 per cent of the cases.

In an alveolar carcinoma of the cervix that had been treated with small doses of röntgen rays, there was a maximum increase in eosinophilic leucocytes, but with only a few badly preserved plasma-cells. Eosinophilic leucocytes, and plasma-cells as well, occur in great numbers only in somewhat succulent living tissue; they disappear from necrotic and sclerotic hyaline tissue, regardless of whether this condition has arisen spontaneously or as the result of irradiation.

Local eosinophilia is found in beginning as well as advanced carcinoma, and in those that show necrosis and hæmorrhage, as well as those that do not. Local eosinophilia is less uniform and less pronounced than plasma-cell infiltration in carcinoma; it is independent of infiltration with neutrophile leucocytes. In areas with local eosinophilia there is always an increased number of eosinophilic leucocytes in the blood-vessels of the region.

**Poth, H.: Torsion of the Myomatous Uterus** (Kasuistischer Beitrag zur Achsendrehung des myomatösen Uterus). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1147.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A fifty-six-year old unmarried woman had passed the menopause five years before. At 35 years of age her abdomen had begun to increase in size. Four weeks before the present illness there had been increased growth of the abdomen, pain, and constipation. Two days before the operation she was troubled with sudden severe pain, vomiting, and complete constipation. Laparotomy was performed because torsion of the pedicle of a tumor of the right ovary was suspected. There was a hæmorrhagic exudate in the abdominal cavity. A tumor as large as a man's head was found, attached by a short pedicle to the anterior surface of the soft fundus. It was removed after the pedicle was ligated. The uterus with the adnexa and the right broad ligament was twisted 360° around its long axis from right to left. It was amputated with the adnexa at the point of torsion. The myoma weighed 3750 gms. On the anterior surface of the fundus there was a subserous myoma as large as a walnut, and on the posterior surface an interstitial one the size of a dove's egg. The torsion was probably started by the patient's work as a seam-

stress, and the immediate cause was probably active peristalsis and change of position in sleep. Eighty-two cases of torsion of a myomatous uterus are described in the literature.

MORALLER.

**Peterson, E. A.: Streptococcal Infection of the Cervix Uteri.** *Med. Rec.*, 1914, lxxxv, 571.

By Surg., Gynec. & Obst.

Examination of a young girl of 18 years showed the vulva to be the seat of an intense erysipeloid inflammation involving the entire genitals and the surrounding skin for a distance of one inch. This was accompanied by much itching and burning. Leucorrhœa was also present. Three such attacks occurred and the leucorrhœa at no time ceased between attacks although antiseptic douches were used.

After the third attack, a vaginal examination was made and the portio vaginalis of the cervix was found to be red and denuded of mucous membrane. After a treatment of daily applications of argyrol tampons for a month; the condition was cured. Bacteriological examination showed the presence of many short-chained streptococci. There was no recurrence of the former condition and the leucorrhœa ceased.

EUGENE CARY.

**Whitehouse, B.: Syphilis in Relation to Uterine Disease.** *J. Obst. & Gynec. Brit. Emp.*, 1914, xxv, 13.

By Surg., Gynec. & Obst.

This paper is a preliminary report on a series of 18 cases of chronic metritis, of which a history of syphilis was obtained in but one, but of which 7 gave a well-marked positive reaction to the Wassermann test. The author had usually regarded fibrosis uteri as being a reparative process secondary to degeneration of the myomatous elements. Especially in elderly women this was thought to be the result of arteriosclerosis, but in the light of the positive Wassermann reaction it would appear that this fibrosis is also at times associated with a syphilitic element. This agrees with Andrews' observation that certain lesions of advanced syphilis are intrinsically fibrotic from the beginning, as the hepatic cirrhosis and pulmonary induration in the syphilitic infant. Many lesions in the acquired disease take the same form.

The writer's investigations were made along two lines of inquiry: (1) the application of the Wassermann reaction to patients who present uterine lesions, and (2) attempts to demonstrate the spirochæte pallida in the tissues or secretions of the uterus. Thus far Whitehouse has failed to show the organism in sections stained by Giemsa's method. It should be noted that, of the 7 cases reported as yielding strongly positive Wassermann reactions, all were multiparæ. The conclusions thus tentatively formulated are as follows:

1. The importance of recognizing a form of fibrosis of the uterus produced by the virus of syphilis, in other words, the existence of a true syphilitic fibrosis.



2. The necessity of testing by the Wassermann reaction all patients who present clinical pictures of chronic metritis and fibrosis, since this may provide the only evidence of the syphilitic nature of the affection.

3. The exact proportion which cases of syphilitic fibrosis bear to similar gross changes produced by other factors must at present remain undetermined until a longer series of cases has been investigated.

CAREY CULBERTSON.

**Welton, T.: Why the Uterus Should Not Be Curetted; a Substitute for Curettage, with a Report of Two Hundred and Eight Cases.** *Long Island M. J.*, 1914, viii, 81. By Surg., Gynec. & Obst.

Eliminating the uterine curette as a means of laboratory diagnosis and confining the question to one of therapeutics, Welton questions whether or not uterine curettage is ever justifiable.

All of the conditions which usually have been thought to call for uterine curettage are discussed more or less at length and many explanatory examples are given to show wherein uterine curettage is not only futile, but absolutely harmful. "But, after all," continues the author, "the main objection to uterine curettage is the utter impossibility of thoroughly curetting the interior of the uterus."

Welton believes that in the vast majority of cases — perhaps all cases of puerperal septicæmia — the curette is not only useless but criminal. As a substitute for the curette, he offers the application of the 50 per cent tincture of iodine to the inside of the uterus. The technique of this procedure is as follows:

After the cervix is dilated, strips of gauze, six to eight inches long, which have been previously soaked in the 50 per cent tincture of iodine, are introduced by means of a uterine sound, into the cavity of the uterus. Each strip is left in the uterus about one minute; then another strip is introduced. If a drain is required, the last strip of iodinated gauze is left in the uterus and removed in about eight hours.

In 208 cases, including 34 abortions of all types, 2 miscarriages, and 13 post-partum septicæmias, the endometrium was iodinated, as above indicated, and in no case was the curette used except for diagnostic purposes.

The following conclusions may be formulated:

1. The curette is a dangerous instrument and is not capable of doing that which it was originally intended to do.

2. Curettage in the hands of the inexperienced is a difficult and dangerous operation.

3. Curettage is many times employed without reason, has become a habit handed down from a past generation, and could well be dispensed with altogether.

4. The 50 per cent tincture of iodine (official) applied to the inside of the uterus is, at the present time, the best substitute for uterine curettage.

HARVEY B. MATTHEWS.

**Patton, W. T.: A Case of Supplemental Vicarious Menstruation Cured by Submucous Resection of Nasal Septum.** *Laryngoscope*, 1914, xxiv, 184.

By Surg., Gynec. & Obst.

The author reports a case of a woman 20 years old, who had hæmorrhage from the nose for three days preceding each menstrual flow. On examination, the nasal system was found to be deviated in an "S"-shaped deformity, touching the turbinates on both sides.

A submucous resection was done and since that time no hæmorrhage has occurred preceding the menstrual periods.

EUGENE CARY.

**Whitehouse, H. B.: Physiology and Pathology of Uterine Hæmorrhage.** *Lancet*, Lond., 1914, clxxxvi, 877.

By Surg., Gynec. & Obst.

This paper deals with the physiology of uterine hæmorrhage. The most interesting point brought out, as a result of the author's experience, is the effect of the cervical and uterine secretions on the menstrual blood.

It was noted that the formation of a menstrual clot was usual in the lower animals and by questioning 120 women it was found that 50 per cent found small clots in their menstrual flow. The question arose, "Why does not all the blood clot?" An attempt by the author and Maitland to discover an antithrombin gave only negative results.

Whitehouse makes the statement that "with the healthy and normal endometrium clotting always takes place in the uterine cavity." This was discovered when an attempt was made to obtain blood from the uterine cavity by means of a uterine catheter. The blood always clotted in the tube, even when the tube was oiled and paraffined.

The question arose as to whether there was not a specific thrombolytin in the uterine secretion. To prove this, menstrual blood, both vaginal and uterine, was obtained and added to blood from the basilic vein. This mixture clotted in a short time, and on incubation the clot was resolved within from 6 to 24 hours. In other experiments it was found that this thrombolytic property of menstrual blood acted quantitatively. When experiments were carried out to show a fibrinolytic substance with ox-blood, the experiments were negative.

Next the effects of mucin, calcium, salts, lactic and butyric acids—substances present in menstrual blood—were tried on the coagulation of blood and resolution of the clot—they were negative.

The author notes in passing that ovarian blood-cysts have a thrombolytic action, but in contradistinction to menstrual fluids they contain no calcium salts, while menstrual fluids contain more than the usual amount.

In brief, it is shown that the menstrual discharge must be classed under two heads; viz., (1) contents of the uterus, and (2) contents of the vagina. The menstrual blood clots very rapidly in the uterus and is then digested by a lysin and passes into the vagina usually in a fluid state.



The author discusses the histological characteristics of the menstruating endometrium, as described by Alder and Hitschman. The condition is divided into (1) premenstrual, (2) menstrual, and (3) postmenstrual stages. The premenstrual period is the time when the cells of the endometrium have reached their highest stage of physiological development and at this time they exhibit in many cases a decidual appearance or a "decidual reaction," as shown in figures in the original article.

If pregnancy does not now take place, menstrual hæmorrhage occurs and tissue cells are lost. The post-menstrual period is a reconstructive period.

As regards factors in the production and cessation of menstrual hæmorrhage there are three possibilities: (1) the effect of uterine contractions limiting the supply of blood, (2) the action of hormones producing capillary dilatation *in utero*, and (3) a biochemical function of the endometrium. Bell and the author have both caused uterine contractions in rabbits by injection of uterine secretions, so in this way, by reabsorption, uterine blood flow may be limited. Bond has gone into this chemical composition of uterine secretions and has artificially produced hydrometria for experimental purposes, in rabbits. Whitehouse performed six experiments on rabbits with this in mind and reached the following conclusions:

"The experiments, as far as the investigation has gone, appear to show that the uterine secretion in rabbits, at least, is under the control of the ovaries both as to amount and physiological action. The normal secretion apparently aids coagulation of the blood—a point of interest when it is remembered that pro-œstrum in this animal is not associated as a rule with external hæmorrhage. The secretion also appears to stimulate œstrum. Bond's experiments have shown that when the fluid is pent up, as in artificial hydrometria, œstrum is frequent and prolonged, and the author's investigations certainly tend to confirm Bond's observations. It appears possible, therefore, that uterine secretion, stimulated and controlled by an ovarian hormone, is partly absorbed and produces that dilatation of vessels which is characteristic of the late stages of pro-œstrum and immediately precedes œstrum."

The effects of extracts of sheep's endometrium and ovary containing corpus luteum on the uterus and ovaries of rabbits was tried, but only negative results were obtained. EUGENE CARY.

**Polland, R.: Dermatosis Dysmenorrhœica Symmetrica** (Weitere Beiträge zur Dermatosis dysmenorrhœica symmetrica). *Arch. f. Dermat. u. Syph.*, 1913, cxviii, 260.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

This disease affects only women who have more or less menstrual disturbance. Most cases show the lipid reaction of Neumann and Hermann. The skin affection begins with hyperæmia of the perifollicular vessels, followed by serous or bloody exudation and the formation of vesicles on the epidermis.

In mild cases the process ends in a few days; in severe cases there may be necrosis in the nature of an infarct, which extends entirely through the cutis and heals slowly, leaving severe scars. The eruption may appear over the whole body, but it is almost always symmetrical. The disease often appears as a symptom of puberty. Therapeutically, ovaraden triferrin seems to have a good effect. The author thinks it certain that the skin symptoms are not artefacts. The etiology seems to indicate a disturbance of the internal secretion of the ovary, but nothing is known as to the nature of it.

The author rejects the theory that it is a trophoneurotic disturbance. To prove that dermatosis dysmenorrhœica symmetrica is an independent clinical entity, he discusses the so-called angioneuroses, which have the characteristics of herpes, and can be traced to lesions of definite nerves. RUHEMANN.

**Friedrich, M.: Amenorrhœa and Tuberculosis; a Clinical and Experimental Study** (Amenorrhœe und Phthise. Eine klinische und experimentelle Studie). *Arch. f. Gynäk.*, 1913, ci, 376.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The results of the author's experiments are as follows: Amenorrhœa very frequently accompanies pulmonary tuberculosis; therefore it has been very commonly assumed that there was a causal relation between them. Lipoid determination does not show any such relationship. It is probable that the ovaries are very sensitive organs and the cessation of their function shows a decreased resistance of the body or a disturbance in the equilibrium of metabolism. Animal experiments did not show that lipidæmia favored the dissemination of the tubercular process; in fact they indicated the contrary. Tuberculosis made marked progress only in pregnancy, which shows that special factors are at work in this condition. In intoxications there was no effect on the process either for good or evil. But lipidæmia is an important factor in pregnancy. It is possible that in this condition lipid determination may be a valuable means of diagnosis.

RUNGE.

**Van Teutem, E. S.: Does Retroflexion Cause Symptoms** (Macht Retroflexio Symptome)?

*Maandbl. v. verlosk. en vrouwenz.*, 1913, ii, 611.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The answer to the above question seems to the author important from a medicolegal standpoint. He examined 441 parous and 212 nulliparous women at the Leiden gynecological clinic and concluded that retroflexion without symptoms is very unusual. Sixty-four per cent of the parous and 75 per cent of the nulliparous women complained of pain, pain in the abdomen and in some cases sciatica, etc. were to be attributed to the retroflexion; 79 per cent of the multiparæ and 69 per cent of the nulliparæ had menorrhagia; 37 and 73 per cent dysmenorrhœa; 50 and 53 per cent too frequent menses; 56 and 54 per cent irregular menstruation; and 1 per cent of the nulliparæ amenorrhœa.



There was leucorrhœa in 77 per cent of the multiparæ and 62 per cent of the nulliparæ, while the same symptom occurred in antelexion in only 45 and 20 per cent of the cases. Sterility was not increased by retroflexion but the tendency to abortion was. About 20 per cent of the women complained of general disturbances such as nervousness and stomach disorders.

Asthenic symptoms were found twice as often in women with retroflexed uteri as in women with uteri in a normal position. In almost all of the cases the author believes the symptoms were to be attributed to the retroflexion. Asthenia is rarely, diseases of the adnexa and prolapse practically never the cause, as the tables relate only to movable retroflexions doubtful cases were eliminated. C. H. STRATZ.

**Stark, S.: The Etiology of Pelvic Prolapse, Anatomically Considered.** *Lancet-Clin.*, 1914, cxi, 369. By Surg., Gynec. & Obst.

The views presented are the result of dissecting seven pelvis from subjects who had met with laceration of the outlet and presented varying degrees of prolapse.

Differences in character and degree of descent of pelvic structures are dependent upon variations in the nature of existing lesions. Although the paper only takes cognizance of prolapse due to anatomical trauma with the sequelæ thereof, the author states that the same underlying principles can be made to apply to congenital prolapse, to that associated with spina bifida, extrophy of the bladder, and that consequent upon senility. It is his belief that prolapse is at all times the direct result of a fault in the connective-tissue structures of the genito-urinary organs. He has no faith in the influence that the levator ani or any other perineal muscle directly exercises as supporting agent and believes that this power is only operative through the medium of its fascia. It is high time, he thinks, that reference to tears through the levator ani muscle and textbook illustrations of this character were eliminated, for they are pure figments of the imagination. In all the minute dissection made by Tandler and Halban, Edward Martin and Liepman, not once did they encounter a tear through the levator muscle.

The author then takes up the normal position of the genito-urinary organs. This is followed by a description of the anatomy of the pelvis and the rôle played by the various fascial layers. From his studies, Stark holds that the descent of the uterus or bladder wall is entirely due to damage to the pelvic connective tissue; and prolapse of the vagino-rectal septum to a lesion of the connective tissue of the pelvic outlet. It is an accepted observation that complete laceration of the perineum is very often unattended with descent of the pelvic viscera. The enlargement of the genital hiatus is the direct result of a defect in the perineal fascia, which permits the levatores to roll outward and consequently toward the lateral wall of the pelvis. The atrophy

and fatty degeneration are secondary conditions following the pressure and circulatory disturbance occasioned by the prolapse. EDW. L. CORNELL.

**Schubert, G.: Transplantation of Fascia in the Treatment of Total Prolapse** (Die Verwertung der freien Fascien-transplantation zur Heilung des Totalprolapses). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 21.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author describes in detail a procedure by which he tries to supplement the defective function of the ligaments of the uterus by means of transplanted fascia. By fixing a band of fascia in the region of the sacro-uterine ligament the prolapsed part of the lower segment of the uterus is lifted up and held in a position of antelexion by a sort of lever action, the fulcrum of the lever being about at the level of the insertion of the round ligament in the normal uterus. By fixing the free end of the band of fascia to the abdominal musculature the fulcrum is kept from sinking further. BRUNO WOLFF.

**Watkins, T. J.: Transposition of the Uterus and Bladder, in the Treatment of Extensive Cystocele and Uterine Prolapse.** *J. Mich. St. M. Soc.*, 1914, xiii, 127.

Cystocele is hernia of the bladder — uterine prolapse is hernia of the uterus. The transposing of the relative positions of the bladder and uterus cures the cystocele. The bladder rests upon the posterior surface of the uterus. The uterus plugs the hernial opening. There has been no recurrence, to the author's knowledge, of the cystocele in an experience of sixteen years. Some recurrence of the uterine prolapse has occurred in 5 to 10 per cent of cases.

The fundus, the cervix, or the fundus and cervix may protrude into the vaginal orifice. This, however, is easily remedied by a second operation.

The operation should be modified as required in each individual case as follows: (1) Very large uterus; (2) hypertrophied or much elongated cervix; and (3) extensively elongated broad ligaments.

The modified technique consists in: (1) Excision of part of the large uterus, the anterior wall, and part of the fundus, (2) high amputation of the cervix; (3) when much of the uterus is removed or a high amputation made, excision of all of the uterine mucosa simplifies the technique.

Thorough "reaming out" of the cervix is valuable in cases of complete uterine prolapse. Firm closure of the perineum is essential to a good result.

**Stickel, M.: Experimental Study of the Effect of Glands of Internal Secretion on the Activity of the Uterus** (Experimentelle Untersuchungen über den Einfluss der Drüsen mit innerer Sekretion auf die Uterustätigkeit). *Arch. f. Anat. u. Physiol.*, 1913, 259.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Spontaneous contractions of the uterus are only rarely found in virgin rabbits. In rabbits which have



delivered young there are almost always spontaneous contractions, while in rabbits which have been castrated the curve resembles that of virgin rabbits. The uterine curve of rabbits whose ovaries have been treated with röntgen rays is similar. The virgin uterus responds the least, the pregnant uterus the most, to oxytocics.

The substances that stimulate the uterus to contractions in rabbits that have been delivered of young are ovarian extract, a corpeus luteum extract of cattle and ovarian extract of normal rabbits and those that have been treated with röntgen rays. Corpus luteum extract has the most pronounced effect but the effect is less marked in castrated animals.

Extract of ovaries of rabbits that have been treated with röntgen rays has an especially active effect on the uterus of rabbits that have been treated with the rays. He comes to the conclusion that there is in the body of the rabbit a hormone that inhibits uterine contraction, and that there is an ovarian hormone that is antagonistic to it. LAMPE.

**Schmauch, G.: The Thyroid Gland in Woman and Its Effect on Menstruation and Pregnancy** (Die Schilddrüse der Frau und ihr Einfluss auf Menstruation und Schwangerschaft). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxviii, 662.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The difference between man and woman is due not only to the ovary but to the whole system of glands with internal secretion. The periodicity and greater irritability of the organs is specifically feminine. Periodicity is manifested by menstruation, which does not depend on ovulation alone but must be regarded as a product of polyglandular activity. The participation of the thyroid is shown by its increase in size during the period.

A further evidence is furnished by the history of a case of amenorrhœa with menstrual molimen in which thyraden had a temporary curative effect.

The periods often occur prematurely during thyroid therapy, a case being reported by the author, in which migraine appearing first at the time of the periods and then more frequently was cured by thyraden.

In another woman with symptoms of Basedow's disease there was a decrease in the menstrual discharge, in a later stage of hypothyroidism it was increased, and still later under thyroid medication it returned to the earlier type.

In the beginning of pregnancy there is frequently insufficiency of the thyroid gland. A normal course is possible only if the gland is sufficiently active. All changes in metabolism, such as the removal of calcium, phosphorus, etc., for the nutrition of the fœtus, irritate the glands with internal secretion, evidence of which is found in the insufficiency of the adrenals, manifested by pigmentation, and in hypertrophy of the hypophysis and thyroid. A case of threatened eclampsia was favorably influenced by thyroid medication.

The hypersecretion of the thyroid enables the mother to give up more salts for the nutrition of the fœtus. If this were not the case the maternal organism would be exhausted by the fœtus, therefore women who have lost the necessary elasticity of the organs suffer much from pregnancy. After delivery the functional capacity of the glands is decreased again without any disturbance; this decrease is as inexplicable as the earlier increase. Ovulation may furnish the stimulation for the formation of myomata; pregnancy interrupts this periodical stimulation, and may therefore tend to prevent them. In one case a myoma was found during pregnancy that could not be demonstrated two and one-half years later. Sterility frequently produces numerous unpleasant symptoms that disappear with the beginning of pregnancy. KERMAUNER.

#### ADNEXAL AND PERIUTERINE CONDITIONS

**Meyer, R.: Pathological Anatomy of the Ovary** (Beiträge zur pathologischen Anatomie des Ovariums). *Verhandl. d. deutsche path. Gesellsch.*, 1913, 396.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The chief sources of ovarian cysts are: (1) Cysts which originate in perioöphoritis by heterotopic proliferation of epithelium and the formation of an epithelial lining to abscess cavities; (2) cysts of the rete and of the medulla; and (3) parenchymatous cysts, in which follicular cysts and corpus luteum cysts may be distinguished. Meyer draws a sharp distinction between these two forms contrary to most authors. A further peculiar form is cystic atresic follicles with partial accessory lutein border formation and the partial persistence of granulosa epithelium in completely atresic follicles with lutein formation. GOLDSCHMIDT.

**Keller, R.: Functional Test of Activity of the Ovary** (Über Funktionsprüfungen der Ovarialtätigkeit). *München. med. Wchnschr.*, 1913, lx, 2162.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reviews the experiments of Cristofaletti and Adler as to the inhibitory effect of the ovary on the chromaffin system. The subjects were 4 patients with amenorrhœa, 3 in the menopause, and 13 castrated women. There was a strongly positive reaction only 5 times after an 0.3 mg. adrenalin solution was used: in 2 cases of marked symptoms of the climacteric there was no reaction, and on the other hand it was positive in 2 cases of severe menstrual hæmorrhage. The reaction to 0.0005 gr. atropine and 0.005 gr. pilocarpine was positive only 5 times out of 13 cases of severe menstrual bleeding, in one of which the adrenalin reaction was also positive; in 9 normal control cases it was positive 3 times.

The conclusion is that the function of the ovary cannot be tested by the reaction after injections of adrenalin or of atropine and pilocarpine.

BUTZENGEIGER.



**Perkins, C. W.: Cancer of the Ovary with Rupture in a Child of Eight Years.** *J. Am. Inst. Homœop.*, 1914, vi, 790. By Surg., Gynec. & Obst.

Perkins gives a short résumé of the literature and reports a case of sarcoma of the ovary in a girl of eight years.

At the Massachusetts General Hospital, between 1870 and 1910, there were only 54 cases of cancer of the ovary; in 6 of these there was no operation; in 19 there were at autopsy evidences of ascites; 5 cases were sarcoma, but one of these had ascites. No ages were given. Lahey reported a case of carcinoma of the ovary in a girl eleven years old. According to Pfannensteil, the average age in his series was thirty-two years.

It is said that sarcoma of the ovary is almost always primary and that if secondary it is from the uterus. In Perkins' case, the uterus was normal, but the omentum was sarcomatous so that the growth must have been secondary to the omentum.

The following conclusions are appended:

1. The accurate diagnosis of malignant tumors in young girls is rarely possible.
2. Fluid in the abdomen in a child, without general anasarca, provided pericarditis and cirrhosis be excluded, should always be investigated by exploratory laparotomy.
3. Ovarian tumors in young girls should be removed immediately.
4. The occurrence of metastatic nodules in surrounding structures is almost certain.

HARVEY B. MATTHEWS.

**Klein, G.: A Hitherto Unrecognized Function of Malignant Ovarian Tumors** (Über eine bisher nicht bekannte Funktion maligner Ovarialtumoren). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxv, 132. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

On the microscopical examination of two malignant papillomata of the ovary the author found immediately under the surface epithelium of the villi, and only there, that the connective tissue was saturated with serous fluid. This was due to absorption on the part of the tumor epithelium, which had taken up fluid from the lymph-spaces of the abdominal cavity. This fluid may possibly have a toxic effect on tumors. If this is true, the appearance of ascites in malignant tumors is to be regarded as a protective procedure on the part of the body designed to destroy the tumor. Therefore the subcutaneous injection of ascitic fluid may be regarded as a rational therapeutic measure.

RITTERSHAUS.

**Lewitsky, M. D.: Primary Carcinoma of the Tube** (Zur Frage des primären Tubencarcinoms). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, xxviii, 1805. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A short description is given of the published cases of primary carcinoma of the tube. From these and his own cases the author describes the clinical and pathological-anatomical picture of the disease.

Preceding inflammation of the tube is an etiological factor. Most cases are in women who have had no children or only one. It generally appears during the climacteric. Cramplike pains are among the early symptoms. There is leucorrhœa which is first serous, then seropurulent, and finally bloody. It is periodical and when it appears the tube decreases in size. Frequently there is dysuria, but often there is no decided cachexia. The symptoms mentioned, except the cramplike pains, are inconstant, therefore there are difficulties in the clinical diagnosis.

Primary carcinomata of the tube are of papillary structure, from the size of a plum to that of a child's head, and hard in consistency. They are mostly situated in the true pelvis to one side and behind the uterus. Microscopically they may be papillary or villous, alveolar or mixed, generally the latter. As to the structure of the epithelium they are cylindrical celled cancers. Unfavorable conditions of nutrition lead to degenerative processes and deposition of calcium. Extension of such cancers is by continuity and metastasis. The treatment consists of operation by laparotomy. There are different methods of operation: the radical, the supravaginal, removal of both tubes, or removal of only the diseased tube. Recurrence is frequent and generally appears between the nineteenth and twentieth month. As many cases show, the result depends not on the method of operation, but on the operation being performed early.

GINSBURG.

**Fonyó, J.: Primary Carcinoma of the Tube** (Über das primäre Tubencarcinom). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1317. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Cancer of the tube has only been diagnosed in 6.5 per cent of the cases. Fonyó distinguishes: cancer of the mucous membrane, (a) simple papillary carcinoma, (b) alveolar papillary carcinoma; and cancer of the wall of the tube, alveolar carcinoma (Friedenheim). He regards the papillary type as the chief one, the others being merely variations of it. None of the methods of treatment have been successful because the diagnosis is generally not made until the disease is in an advanced stage. As only the early stages give any hope of cure by radical operation, and as diagnosis at this stage is very difficult, Fonyó recommends that radical total extirpation with removal of the retroperitoneal glands be performed in all cases of doubtful tumors of the adnexa.

K. HOFFMANN.

**Kraus, E.: Epithelial Proliferation in the Tube, Resembling Carcinoma** (Über carcinomähnliche Epithelwucherungen in der Tube). *Gynäk. Rundschau.*, 1913, vii, 885. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author examined 60 inflamed tubes histologically; thirty-eight showed no proliferation of the epithelium and 22 showed proliferation. Three of these resembled carcinoma; the epithelium had penetrated the entire stroma. This similarity to carcinoma has



been described by most authors in connection with tuberculosis, but Von Franqué had a case in a non-tubercular salpingitis; the author found that it was not tuberculosis, but inflammation, that was responsible for the proliferation. Among the 60 cases there were only 4 cases of tuberculosis and none of these showed any similarity to cancer.

The author explains the extreme degree of proliferation as follows: The products of inflammation stimulate the epithelium to proliferation; in places where the secretion stagnates, the irritation acts over a longer time and the proliferation continually progresses. The question of the etiological relation between cancer and inflammation cannot be decided, for it is generally very difficult to decide whether the inflammation or the cancer came first. He does not decide the question of whether the epithelial proliferation is really carcinomatous.

ROTHMANN.

**Child, Jr., C. G.: The Surgical Treatment of the Tube and Ovary.** *J. Obst. & Gynec. Brit. Emp.*, 1913, xxiv, 278. *By Surg., Gynec. & Obst.*

Child contributes a general article on the technical phase of his subject. His conclusions are:

1. When operating by the abdominal route the pus should always be removed by aspiration before any extensive separation of adhesions is attempted. This prevents soiling the peritoneal cavity, and, by decreasing the bulb of the tumor, eases up on the adhesions, adding very materially to the subsequent ease of the operation.

2. Drainage should not be used in other than exceptional cases, such as the mixed infections, and where there is a great deal of oozing from raw surfaces, and then the drainage should be per vagina.

3. The transverse incision should be used for greater exposure of the field of operation, with less exposure of the intestines.

4. In closing the abdominal wound the use of absorbable suture material should be avoided. Better results are to be obtained with non-absorbable non-infectible material.

5. The condition of the appendix should be inspected without fail to make sure that it is not in the pelvis.

CAREY CULBERTSON.

#### EXTERNAL GENITALIA

**Ruge, E.: Construction of Vagina from Sigmoid Flexure by Laparotomy** (Ersatz der Vagina durch die Flexur Mittels Laparotomie). *Deutsche med. Wchnschr* 1914, xl, 120.

*By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

The author gives a short critical discussion of the two chief methods of replacing the defective vagina, then he describes a procedure successfully performed on one of his patients. He made a transverse incision of the fascia just above the symphysis. The free loop of the flexure was brought forward and a piece 15 cm. long excluded, with the mesentery attached. It was ligated above and below with linen

ligatures. The excised piece was laid aside in damp compresses while the two openings in the flexure were sutured together circularly with a continuous linen and an invaginating catgut suture. The incision in the mesentery was then closed with fine sutures. A canal was made with dressing forceps from the vulva through the floor of the pelvis, and the ligature at the lower end of the excised piece of intestine seized and drawn through it until it projected 1 cm. in front of the vulva. The peritoneum of the pelvic floor was sutured to the piece of intestine with two catgut sutures. The mesentery of the flexure was fastened to the pedicle of the vessel by a catgut suture so that it was separated by the rest of the flexure from the remaining contents of the abdomen. The abdominal wound was sutured; the ligature was removed from the end of intestine in front of the vulva and the intestinal mucous membrane sutured with catgut to the skin of the vulva.

MORALLER.

**Curtis, A. H.: The Etiology and Bacteriology of Leucorrhœa.** *Surg., Gynec. & Obst.*, 1914, xviii, 299. *By Surg., Gynec. & Obst.*

The author's paper is the forerunner of one on treatment. A twenty-months' study of 75 cases furnishes the basis for the report, which includes a detailed description of bacteria common to leucorrhœa.

The author finds that the uterine cavity tends to remain free from bacteria in cases of chronic purulent vaginal discharge.

Mucus from the cervix may promote the development of purulent discharges, the usual seat of formation of which is the lower genital tract.

Gonorrhœal infection is the exciting cause of leucorrhœa in the majority of women who have never been pregnant. After causing changes favorable for the development of mildly pathogenic organisms the gonococcus tends to disappear. This suggests that a chief part played by it in chronic cases consists in preparing the soil for leucorrhœa-producing anaërobic bacteria.

Relatively small numbers of staphylococci and colon bacilli are found except in patients who frequently use douches. Streptococci are wanting in fresh smears but develop from diplococci in cultures.

The great contingent of leucorrhœal bacteria consists of anaërobes, of which gram-negative bacilli form a large proportion. These bacteria attack the tissues with low resistance and apparently play an active part in the production and maintenance of leucorrhœa. Consideration of the influence on leucorrhœa exerted by various lesions, e. g., lacerations, displacements, etc., is reserved for a later date.

**Varela, C.: Treatment of Simple Vaginal Hydrocele by Adrenalin** (Traitement de l'hydrocèle vaginale simple par l'adrénaline). *Imprensa med.*, 1913, xxi, 335. *By Journal de Chirurgie.*

Varela reviews the difficulties in the treatment of vaginal hydrocele. In puncture followed by the



injection of tincture of iodine there is pain which keeps the patient in bed for several days, frequent recurrence, etc.; the tunica vaginalis is often so thick that it is difficult to turn it back, and if it is excised there is an injurious effect on the function of the testicle. Therefore, he has adopted Rupfle's treatment, puncture followed by the injection of adrenalin, which is a simple method, harmless, painless, and effective, and it can be performed in the office without keeping the patient from his work.

Rupfle first treated vaginal hydrocele by this method, the idea resulting from the reading of Barr's treatment in 1904 of several cases of serous effusion, pleural, pericardiac and ascitic, by the injection of 1:5000 adrenalin, the injection being repeated two or three times, the result being that effusions which could not be overcome in any other way disappeared. Rupfle decided to apply the method in the treatment of two cases of vaginal hydrocele, one of which had lasted for 10 years and the other for 7 years. Both cases had been treated unsuccessfully by repeated puncture, with or without injection of alcohol, iodine, etc. Rupfle removed several hundred ccm. of the liquid and injected 2 ccm. of 1:5000 adrenalin. The results were the same in the two cases: a little after the injection there was severe pain, then for a few days slight symptoms of inflammatory or irritative reaction with a little effusion, which disappeared after a few days, with drying up of the hydrocele in a few weeks. There was no recurrence, 9 months after the operation.

Rupfle found the method simple, harmless, and efficacious and decided to use it commonly in his practice. Dzewoncki also used the method as a result of reading Barr's article. In two cases he withdrew 4 to 5 ccm. of hydrocele fluid and injected half a ccm. of 1:1000 adrenalin. There was little or no reaction and also little effect. Five days later in one case and 8 days later in the other he repeated the injection, the result being moderate reaction with redness and swelling, but little pain. Two weeks after the first injection both patients were discharged cured. Five months later one of them was seen again without recurrence.

Barr's method deserves to be tried in cases where for any reason radical treatment by partial excision of the tunica vaginalis cannot be performed. The latter operation remains the method of choice. The chief point urged against it, injury to the function of the testicle, does not occur if the resection is only partial, as Ancel and Bouin have shown. It is only Bergmann's total excision that produces atrophy of the spermatic part of the gland with preservation of the interstitial part.

P. DE RIO BRANCA.

**Benda, C.: Case of External Female Pseudohermaphroditism** (Fall von Pseudohermaphroditismus femininus externus). *Berl. klin. Wchnschr.*, 1914, li, 66.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Autopsy was performed on the body of a two-months' old boy. Externally there were completely

developed male genitalia, except that there were no testicles in the scrotum, in conjunction with a female vagina, uterus, tubes and ovaries. This is the most complete case of pseudohermaphroditism that has thus far been observed and Benda proposes the name pseudarrhenia for it. In the hope of discovering true hermaphroditism he examined the ovaries for male gland formation but found none.

Great importance is sometimes attached to Leydig's interstitial cells in the way of internal secretion, but the author does not believe this is justified because the cells of all the other glands with internal secretion are epithelial in nature, while these are connective tissue; they are also found in very varying amounts in the functioning testicles of very nearly related animals. There is a certain influence of the adrenal cortex on the sexual characteristics of both sexes. In this case there was tremendous hyperplasia of the suprarenals, especially a true glandular proliferation of the parenchyma of the cortex. Fiebiger reports that in all the more extreme degrees of pseudarrhenia there is a proliferation of the cortical substance and Kraus reports suprarenal tumors accompanied by development of virile hair.

EHRENBERG.

#### MISCELLANEOUS

**Busse: Gynecological Examinations and Operations in Psychoses** (Gynäkologische Untersuchungen und Operationen bei Psychosen). *München. med. Wchnschr.*, 1913, lx, 2863.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author was astonished to find how frequently gynecological diseases were found in mentally diseased women. Abnormalities in position were usually most frequent as a result of injuries during delivery. Inflammations of the internal and external genitalia of the adnexa, the parametrium and vagina, were frequent; also myomata and other tumors. Sometimes the internal genitalia were completely lacking. A very interesting discovery was the relative frequency of abnormalities of development of the uterus and ovaries, hypoplasia, aplasia, and infantilism.

Most of the operations were for the correction of displacements. In a considerable number of these cases the ovaries were removed also, and later the effect on the psychosis was tested by means of Abderhalden's reaction. Some of the operations were for myoma, the usual technique being employed, but the results of laparotomies with the transverse incision seemed to be better than with any other incision.

RUNGE.

**Friedel: Gynecological Examinations and Operations in Psychoses** (Gynäkologische Untersuchungen und Operationen bei Psychosen). *München. Med. Wchnschr.*, 1913, lx, 2863.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author and Busse examined 200 cases, in 10 per cent of which gynecological operations were performed. Two hysterical patients who had been



castrated, one 30 and one 2 years before, showed no effect on their psychoses. The imbeciles were often kept in the institution only on account of the fear of their having illegitimate children.

In epileptics improvement was seen after abortion. In the cases of circular insanity different gynecological affections were demonstrated, but in spite of them the patients had recovered from previous attacks of insanity.

In dementia præcox castration was performed in the two following groups: (1) Where the attacks were repeated after several deliveries with progressive mental failure; (2) in patients with periodic conditions of excitement, with the hope of influencing this condition. It is too early to pass judgment on the operations.

RUNGE.

**Waldstein, E. and Ekler, R.: The Demonstration of Absorbed Spermatozoa in the Female Body** (Der Nachweis resorbierten Spermas im weiblichen Organismus). *Wien. klin. Wchnschr.*, 1913, xxvi, 1689.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The authors tried to answer the question of what becomes of the spermatozoa in the female body after cohabitation, by means of the Abderhalden reaction. They used rabbits as experimental animals and found that ordinarily there is no ferment in rabbits' blood that breaks up testicular substance. But after cohabitation in 15 animals the blood showed the property of decomposing testicular substance. Moreover, the same animals reacted positively that had before reacted negatively. This shows that as a result of cohabitation a ferment is developed in the female body that reacts specifically to testicular substance. The same reaction was found in 9 out of 10 cases during pregnancy, but the reaction was not so strong as after coitus. The conclusion naturally would be that the reaction was brought about in some other way during pregnancy, probably through the intermediation of the foetus.

FRANKENSTEIN.

**Von Franqué, O.: Pathology and Treatment of Genital Tuberculosis in Women** (Pathologie und Therapie der Genitaltuberkulose des Weibes). *Würzburg. Abhandl. a. d. Ges. d. prakt. Med.*, 1913, xiv, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Von Franqué discusses the etiology of genital tuberculosis in women, and asserts that it generally begins in the tubes, while the ovaries are extraordinarily resistant to tuberculosis. Primary sterility and dysmenorrhœa are often results of genital tuberculosis, and a yet graver condition is the tendency to carcinoma produced by tuberculosis. He then considers tuberculosis of the individual genital organs. The treatment should be operative, either excision of the tubes or radical operation.

The question is discussed of the effect on each other of pregnancy and tuberculosis. Tuberculosis of the placenta is much more frequent than was formerly supposed, but communication of tuberculosis to the child either within the uterus or at delivery is very rare, and the fact of a congenital predisposition is not satisfactorily established, so that it is not justifiable to interrupt pregnancy for the sake of the foetus, but it is undoubtedly justifiable to sacrifice the pregnancy to save the mother. Abortion should be considered only when it can reasonably be expected that it will improve the mother's condition. If the tuberculosis is so far advanced that it seems nothing will stop it, then the child's welfare must be considered. The earlier the pregnancy is terminated the more favorable the influence on the tuberculosis. Care must also be taken that the woman does not become pregnant again; so operative sterilization should be performed or vaginal amputation of the body of the uterus with a view of excluding the dangerous placental site, as suggested by Von Bardeleben.

J. KLEIN.

**Hoehne, O. and Behne, K.: Length of Life of Homologous and Heterologous Spermatozoa in the Female Genital Tract and in the Abdominal Cavity** (Über die Lebensdauer homologer und heterologer Spermatozoen in weiblichen Genitalapparat und in der Bauchhöhle). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 5.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The less acid in the vaginal secretion the longer the spermatozoa retain their motility in the vagina. In the markedly acid secretion of pregnant animals they lose their motility very quickly, so that after an hour no living ones can be found. Human spermatozoa were found to be destroyed very quickly in the supravaginal segment of the genital tract of rabbits and guinea pigs; some individual specimens lived as long as 4 days. Even the spermatozoa of the same species mostly died after 2 days and after 6 days no more could be found at all.

The authors conclude that after the third day it is exceptional for active spermatozoa to be found in the uterus. There is no ground for assuming that spermatozoa capable of impregnation can be found for several days in the healthy tube of the sexually mature female. The spermatozoa probably remain capable of functioning only a short time in the tube, at the very most not more than three days. The spermatozoa that penetrate the peritoneum generally succumb to phagocytosis and are usually destroyed within from 4 to 20 hours. The length of life of the spermatozoa depends on the activity of the walls of the genital tract. The healthier the female and the more active the genital mucous membrane the quicker the spermatozoa are destroyed.

HOLSTE.

## OBSTETRICS

### PREGNANCY AND ITS COMPLICATIONS

**McGuire, S.: Evolution of Treatment of Ectopic Pregnancy.** *South M. J.*, 1914, vii, 208.

By Surg., Gynec. & Obst.

The author gives a short historical sketch of the evolution of the treatment of ectopic pregnancy and also criticizes some of the methods now in vogue. He reviews the last fifty cases which have been under his care. Six had recurrences in the tubes remaining—of this he is positive, as he performed a subsequent operation for ectopic pregnancy. He knows that 7 patients have since had one or more pregnancies in the uterus. The figures are not accurate as he was unable to locate all the patients in the list.

The author is opposed to the removal of the opposite tube, unless it is obviously hopelessly diseased, thus making it possible for pregnancy to occur in the uterus.

EDWARD L. CORNELL.

**Farrar, L. K. P.: Interstitial Pregnancy; with Report of a Case.** *Post-Graduate*, 1914, xxix, 168.

By Surg., Gynec. & Obst.

Farrar gives a collective review including history, etiology, course, diagnosis, and treatment and bibliography of interstitial pregnancy and reports a case occurring in his practice in 1909.

HENRY SCHMITZ.

**Phillips, M. H.: A Case of Peritoneal Implantation of an Ovum.** *J. Obst. & Gynec. Brit. Emp.*, 1914, xxv, 31.

By Surg., Gynec. & Obst.

Abdominal section had been performed on a patient for profuse intraperitoneal bleeding. As blood was oozing from among the fimbriæ of the left fallopian tube, this tube was removed. Later on, careful examination of the tube showed that the bleeding was due to the presence of small areas of trophoblast and early chorionic villi situated at the bases of two of the fimbriæ, but there was no complete implantation sac. On the other hand, a hæmorrhagic nodule, with a peritoneal covering, which was excised from the lateral pelvic wall, has been found to contain an early ovum completely embedded in the extraperitoneal connective tissue. This peritoneal mass, an ovoid a little less than one inch in diameter, was made up chiefly of blood-clot with a serous coat exteriorly. More deeply the nodule was covered by lobules of fat and areas of œdematous alveolar tissue. Serial sections showed marked dilatation of the blood-vessels and, in the middle portion, a compressed and distorted ovum. Its longest axis measured 1.5 mm. There was no embryonic rudiment, but simply a blastocyst with

its external covering of cyto- and plasmodi-trophoblast in single and multiple layers, and a mesoblastic core of a poorly staining matrix with occasional stellate cells. The trophoblast and stroma showed localized projections indicative of early villous formation. The ovum was surrounded by a lacunar space containing blood corpuscles and some poorly staining trophoblast.

The tube showed, at the bases of the fimbriæ, a small blood-clot, beneath which were several strands of chorionic villi and small clusters of cellular and plasmoidal trophoblast, all staining well. The author suggests that the fimbrial end of the tube has formed part of the implantation site of the ovum, that it has been separated from the ovum and the rest of the implantation site, but has retained a few villi and some trophoblast. This separation probably occurred some considerable time previous to the hæmorrhage which occasioned the operation.

CAREY CULBERTSON.

**McAllister, F. J.: Eclampsia.** *Iowa M. J.*, 1914, xx, 436.

By Surg., Gynec. & Obst.

McAllister relates his experience with eclampsia and reports six cases.

In the first case eclampsia occurred at term and immediate delivery stopped the convulsions. In the second case eclampsia occurred during the sixth month of pregnancy. This case was also delivered and given veratrine; after four days of unconsciousness she recovered. The third case was one of eclampsia two hours after a normal delivery.

The fourth case was a primipara, six months pregnant. Her urine was loaded with albumin. The delivery took place 15 hours after the onset but the patient died. The fifth case was one of eclampsia on the ninth day. The delivery was normal and at no time was there albumin in the urine. The patient died in spite of vigorous treatment. The sixth case was a primipara of 23 years, who was at full term when the convulsions began. Her urine contained over 5 per cent of albumin. She was treated for rapid pulse and fever and after several days recovered.

EUGENE CARY.

**Cerecedo, M.: The Most Effective Treatment of Pernicious Vomiting** (Die wirksamste Behandlung unstillbaren Erbrechens). *Siglo Med.*, 1913, ix, 546.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Seven cases that had been treated without effect by other methods recovered rapidly upon the administration of adrenalin, 10 drops of a 1:1000 solution twice daily by the mouth; subcutaneous injection was not necessary in any case. In one



case 10 to 20 drops of a 1 per cent cocaine solution before each meal was a valuable auxiliary treatment, and where there was serious loss of strength nucleo-arsitol was given, one injection daily for ten days, repeated after a week's pause.

Vomiting in pregnancy, as well as eclampsia, is instigated by the ovum, but its primary cause is probably an insufficiency of metabolism in the liver and secondarily in the kidney, from intestinal intoxication, therefore diet is an important prophylactic treatment for both conditions. A milk and vegetable diet should be given. Bowel movements should be kept normal by cholagogues, such as rhubarb, cascara, and calomel. MICHAEL.

**Schüpbach, A.: Pernicious Anæmia in Pregnancy and Labor** (Über perniziöse Anämie in Schwangerschaft und Wochenbett). *Cor. Bl. f. Schweiz. Ärzte*, 1913, xliii, 1535.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

This disease is often observed where pregnancies follow one another too quickly and lactation is prolonged. It is distinguished from cryptogenetic pernicious anæmia by the fact that it is curable. A constitutional factor is the cause of it; perhaps also an insufficient formation of antihæmolysins for the synthesis of iron that takes place on the surface of the placenta under the influence of the syncytial plasma.

The decrease in iron absorption in the second half of pregnancy points to the formation of antihæmolysin. The morbidity among pregnant women is 0.15 to 0.22 per cent. There is exhaustion, yellowish pallor, œdema, dilatation of the heart, heart murmurs, often premature delivery after which the mother's condition grows worse. The mortality according to the Italians is 25 to 50 per cent, according to Payr 100 per cent. If anæmia appears shortly before delivery the prognosis is bad; if during the puerperium, better. The infantile mortality is due to premature delivery. MOHR.

**Kohlmann, W.: The Cæsarean Section in Ante-Partum Hæmorrhage.** *N. Orl. M. & S. J.*, 1914, lxvi, 655.

By Surg., Gynec. & Obst.

Kohlmann states that in cases of central or lateral placenta prævia, pregnancy being at or near term, the living child, the mother in good condition, the cervix closed or only slightly dilated, cæsarean section should be the operation of choice.

The author cites a case of central placenta prævia which he operated. The mother and child left the hospital on the ninth day in good condition.

In premature separation of the placenta or *abruptio placenta*, the author also advises section. He reports a case of this kind which he operated upon with excellent results. The hæmorrhage in this case began after a coughing spell near full term and could not be stopped by tampons. In this case pituitrin was given as a hæmostatic just before the uterus was opened and very little blood was lost. EUGENE CARY.

**Maclaren, A. and Daugherty, L. E.: Intraperitoneal Hæmorrhage, with Special Reference to Hæmorrhage from Ruptured Tubal Pregnancy.** *St. Paul M. J.*, 1914, xvi, 137.

By Surg., Gynec. & Obst.

The authors call attention to the fact that intraperitoneal hæmorrhage resulting from trauma, direct or indirect, is of frequent occurrence. Also that the amount of force exerted by a blow on the abdomen and the visible signs of injury are no index to the damage done to the internal organs. Direct violence is not necessary, for cases have been reported where a simple muscular action has produced a rupture of the liver or spleen.

Of the solid viscera, the liver is most frequently the site of a tear. Crushing injuries are perhaps the most common. Tilton reported 365 cases of injuries to the solid viscera. Of this number, 189 were of the liver and 176 of the spleen, kidney, and pancreas. Hæmorrhage from the liver is best controlled by packing the rent with gauze.

Rupture of the spleen follows next in frequency after the liver. Many of these cases show previous disease of the spleen. Not infrequently it happens that the capsule itself is not injured, and while the laceration may be of great extent, yet the bleeding into the peritoneal cavity will not occur until the capsule ruptures from internal pressure. In such cases the diagnosis is extremely difficult. Rupture of the spleen requires its removal, and this may be done without hesitation.

Rupture of the pancreas or injury to the mesenteric vessels, while not so common, do occur and should always be considered in making a diagnosis.

Probably the most frequent cause of intraperitoneal hæmorrhage is due to some form of extrauterine gestation. The causes of ectopic gestation are theoretical to a very large extent. The inflammatory theory of Tait and the mechanical theories are given, none of which are satisfactory.

Immediate operation, except in the moribund cases, is advised and any dilatory procedures are characterized as dangerous.

The question of the removal of the tube in these cases is sometimes very important from the standpoint of the patient and will have to be determined by the cause of the abdominal pregnancy and the danger to the woman's life. At all odds, it should be borne in mind that in certain selected cases it is justifiable to leave the tube, thus giving a ray of hope to the woman that she may again conceive.

When a pelvic hæmatoma has formed and there are no further signs of hæmorrhage, it should be let alone, for it will be absorbed in time. If the hæmatoma becomes infected and goes on to abscess formation, a post-vaginal section should be done and drainage inserted; then, if necessary, a laparotomy should be done later, when the previous vaginal drain will be in the best possible position and will assist very materially in the ultimate recovery of these very bad cases.

A report is given of 54 ectopic gestations treated



by the authors in the last 22 years. Out of these 55 cases, 6 died, giving a general mortality of 11 per cent, while in the last 11 years, 33 of these 55 cases were treated with only one death.

HARVEY B. MATTHEWS.

**Boero, E. A.: Treatment of Hæmorrhage with the Placenta Located in the Lower Segment of the Uterus** (Behandlung der Blutung beim Sitz der Placenta auf dem unteren Uterinsegment). *Rev. Soc. med. argent.*, Buenos Aires, 1913, xxi, 633. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Cæsarean section is rejected as a treatment for placenta prævia. The assertion that the low insertion of the placenta robs the lower uterine segment of its contractility by the proliferation of villi in the musculature and that it is therefore a physiological necessity to avoid its distention in delivery by means of cæsarean section, is disproved by the demonstration of hardened specimens and by showing the extraordinary rarity of rupture of this segment in placenta prævia. The only case of rupture that the author knows of occurred on the side of the cervix opposite to the point of insertion.

Among 80 cases of placenta prævia treated conservatively in the author's clinic during the past 6 years, 3 died of acute anæmia—3.75 per cent—and two of infection—2.50 per cent. Two of the former had almost bled to death when they came in, so that only one death can really be accredited to the clinic—1.25 per cent. The morbidity of the remainder in the puerperium was 24 per cent, infantile mortality 70 per cent; among these, 22 came to the clinic dead and five in a very serious condition, 29 died in the clinic—36 per cent—and 24—30 per cent—survived.

After reviewing the various surgical and obstetrical methods of treatment the author comes to the following conclusions: (1) The ease with which the cervix can be dilated in placenta prævia indicates that the natural route should be utilized in its treatment. (2) The low maternal mortality when treatment is undertaken at the right time does not justify cæsarean section after the beginning of labor, nor premature delivery. (3) By good obstetrical training the mortality of three-fifths of the cases, due to active interference and infection, can be lessened. (4) Complications of placenta prævia may demand cæsarean section. (5) In central placenta prævia the technical skill of the obstetrician should decide the question. (6) The prophylactic treatment of abnormally situated placenta should consist in sending the patient at once to a hospital which would lessen both morbidity and mortality.

MICHAEL.

**Kreiss, P.: Heart Disease and Pregnancy** (Herzfehler und Schwangerschaft). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1805. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Heart disease is only rarely made worse by pregnancy. From 1903 to 1912 at the Dresden

gynecological clinic pregnancy was artificially ended on account of uncompensated heart lesions only 26 times, 1.1 per cent, among 23,577 deliveries and abortions. Of the 26 cases, 4 died.

The coincidence of heart disease and nephritis is especially dangerous, but there is no absolute indication for the interruption of pregnancy. First, absolute rest is necessary; then treatment according to the rules of internal medicine with digitalis, caffeine, camphor, adrenalin, and alcohol. If œdema and serous effusions do not disappear, and congestion, especially of the kidneys, cannot be overcome, then abortion is indicated.

If the heart disease is very severe or combined with other serious diseases the preliminary attempts to avoid abortion may be omitted. Vaginal cæsarean section is to be rejected if there is extreme congestion, on account of the danger of hæmorrhage. In such cases if the child is living the classical cæsarean section should be performed so as to spare the heart the effect of the pains.

HIRSCH.

**Jaschke, R. T.: Prognosis of Diseases of the Kidney in Pregnancy, Especially in Women with Heart Disease.** *Arch. f. Gynäk.*, 1913, ci, 396.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Only those kidney diseases are of importance that are accompanied by an increase in blood-pressure, and therefore make greater demands on the heart. The acute form of the so-called "kidney of pregnancy" shows little or no increase in blood-pressure and is amenable to treatment; it places practically no burden on the heart. The chronic form on the other hand makes great demands on the heart and is very difficult to treat. The prognosis is made worse by the fact that in 6 to 8 per cent of the cases eclampsia threatens, with its enormous demands on the heart. It is often difficult to decide whether it is a case of disease of the kidney, of pregnancy, or of chronic nephritis.

There are forms of the kidney of pregnancy that are almost impossible to treat, the pressure going up as high as 230 to 240. These kidney affections are almost as hard on the heart as chronic contracted kidney; its work is so enormously increased that even a previously normal heart may fail. The situation is especially dangerous in pregnancy if there is a combination of heart and kidney disease. The prognosis depends on the condition of the heart muscle. In any case it is a very serious complication and the author recommends in all cases of pregnancy, in women with heart disease complicated by a kidney disease in which there is increased blood-pressure, that pregnancy be interrupted, and so by lessening its work give the heart its only chance.

HARM.

**Schenck, B. R.: Pulmonary Tuberculosis and Pregnancy.** *J. Mich. St. M. Soc.*, 1914, xlii, 157.

By Surg., Gynec. & Obst.

There is by no means a unanimity of opinion regarding the treatment of the pregnant woman



afflicted with pulmonary tuberculosis. At the last International Tuberculosis Congress the most variant views were expressed, some holding the older idea that it is best in most cases to allow the pregnancy to continue, others stating most emphatically that radical measures should be taken to end the gestation.

It has been estimated that there are annually in the United States from 22,000 to 44,000 tuberculous pregnant women. It is probable that there are annually, in the state of Michigan, from 700 to 900 pregnant women who have active tuberculosis.

In considering the propriety of therapeutic abortion, a sharp distinction must be made between those patients who have a quiescent, or a healed lung lesion and those in whom the process is active. A failure to make this distinction accounts, to some extent, for the differences of opinion which have been expressed. Moreover, the history of a healed lesion or the assumption, on insufficient grounds, of present trouble has far too frequently been used as an excuse for terminating a pregnancy.

Spontaneous abortion rarely happens as an effect of pulmonary tuberculosis. It occurs only in the case of patients prone to miscarry on account of extensive lacerations, where the added strain of coughing is adequate to bring it about, or where there is sufficient toxæmia to cause the death of the fœtus. In the vast majority of cases the child develops normally and reaches term comparatively unaffected. Such children should be separated from the mother immediately after birth. Theoretically, healthy children may be born of tuberculous mothers and, if properly treated, live to adult life. Practically, however, this ideal is not reached, for Ziekel reports a mortality during the first year of such children of 58 per cent; Diebel, 78 per cent; Weinberg, 78 per cent; Pankow and Kupfele, 54.5 per cent.

The effect of pregnancy on the pulmonary lesion: If we will go over the histories of a number of sanatorium patients, we will find that in many cases the active trouble is dated back to a certain pregnancy or puerperium. At the present time the weight of authority favors the view that pregnancy affects pulmonary tuberculosis unfavorably. Prophylaxis is therefore most important.

Pregnancy having taken place, each patient must be carefully studied and each case judged according to all the circumstances. It would appear that there is now sufficient justification for therapeutic abortion in practically all cases of active tuberculosis. With our present knowledge of the subject there is no justification in any but the rarest cases, for either the operative sterilization as advocated by Schottelius, Bacon, Schauta, Hoehne, and many others, or for the X-ray sterilization, supported by Gauss, nor does it seem right either to remove the uterus and ovaries, championed more particularly by Martin, or to vaginally excise the fundus of the uterus and the placental site, recommended by Bardeleben.

**Gardner, W. S.: Fibroids and Pregnancy; Three Cases.** *Md. M. J.*, 1914, lvii, 56.

By Surg., Gynec. & Obst.

The first case reported by the author was operated early in the third month of pregnancy and an ovoid fibromyoma, measuring fifteen by sixteen centimeters, removed. The tumor was attached by a short but narrow pedicle to the uterus near the junction of the body with the cervix. This patient went to term and was delivered of a nine-pound boy. The tumor in this case was anterior to the uterus and would have interfered with the rising of the uterus.

The second patient had a fibroid tumor which almost filled the true pelvis. She was allowed to go to term, when a hysterectomy was performed after delivering a nine-pound child by cesarean section.

In the third case the fibroid was located in the lower segment of the posterior uterine wall. There was no dystocia, as the tumor was above the brim of the pelvis. This patient was delivered normally. She had a submucous fibroid removed a year before she became pregnant.

C. H. DAVIS.

#### LABOR AND ITS COMPLICATIONS

**Garrett, N. M.: Management of Labor in Cases with Relatively Contracted Pelves.** *Surg., Gynec. & Obst.*, 1914, xviii, 388.

By Surg., Gynec. & Obst.

The following questions were sent by the author to a number of obstetricians and surgeons:

- "1. Number of cases observed?"
- "2. Where you have charge of the case primarily, what method of treatment do you prefer?"
- "3. Do you consider the high forceps operation justifiable?"
- "4. In cases that have been allowed to go to term and cannot be otherwise delivered, do you prefer cesarean section or pubiotomy?"
- "5. Which operation has the greater mortality?"
- "6. What has been your experience as regards union of the bone after pubiotomy?"

Including those observed by the author, 2,935 cases were reported.

Practically all agree to the high forceps operation, under certain circumstances.

Replying to question 4, four obstetricians, representing 305 cases, prefer cesarean section. Four others, representing 2,630 cases, prefer pubiotomy, under certain circumstances. The majority say that cesarean section produces greater mortality. Union of the bone after pubiotomy is satisfactory in nearly all cases. It is more frequently fibrous than bony.

The author recommends:

1. Premature labor at, or after, the thirty-sixth week.

2. Cesarean section, if not seen until term, but before infection and exhaustion have taken place, with conjugata vera under three and one-fourth inches and the child viable.



3. With a conjugate of three and one-fourth inches or greater, mother and child both in good condition, and the head can be made to enter: test of labor; followed, if necessary, first by forceps, second by pubiotomy.

**Uljanowsky, L. W.: Hæmatomata of the External Genitalia and Vagina during Delivery** (Zur Lehre der Hæmatome der äusseren Geschlechtsorgane u. Vagina während der Entbindung). *Ztschr. f. geburtsh. u. Gynäk.*, 1913, xxviii, 1765. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author describes a case of large hæmatoma of the anterior wall of the vagina with severe hæmorrhage in a 19-year-old primipara, and says that such hæmatomata of the genitalia and vagina are rare—1:2000. They appear oftener in the vulva than in the vagina. The etiology is not known with certainty. Uljanowsky gives as contributory causes, quick delivery, changes in the vessel such as varices, and changes in the blood in diseases of the kidney. GINSBURG.

**Crump, W. G., Fitzpatrick, G., Huntoon, G. A., and Richards, R. M.: Symposium on the Conduct of Normal Labor.** *J. Am. Inst. Homœop.*, 1914, vi, 695. By Surg., Gynec. & Obst.

CRUMP emphasizes the necessity of carefully instructing girls as well as boys in gymnastics in order to better the future generations physically. He believes that the state should prohibit marriages of youths under 20 to 21 years of age. Gestation earlier than this is not only more dangerous to the mother but the child is all too often a weakling. The essentials of homemaking should be taught in the schools as well as the home. The physician should consider more carefully the physiological and pathological processes taking place in the female organism, and by a better understanding of the normal, try to work out some helpful rules of procedure to correct the abnormal. Contrary to the preconceived idea and teachings of physicians of the past, and even to-day, the uterus does not lie normally in a constant position of immobile ante-flexion. It readjusts itself to various forces brought to bear upon it. It gradually comes to assume an incorrect position, from faulty pelvic inclination or the transmission of abnormally created forces. These forces should be thoroughly understood in order that developing girls may be so counseled that they may continue in health as they grow in stature and round out into the fullness of mature development. The question of faulty bodily posture is discussed and recommendations made for overcoming it. The author dwells on constipation and suggests that the stool now in use should be discarded and one much lower employed.

FITZPATRICK emphasizes four essentials in the successful practice of obstetrics, viz.: proper mental attitude on the part of the physician; every pregnant woman should be regarded as a pathological case; every obstetrical case, a surgical case; and

fitness and equipment. Under these headings he discusses the subject. He believes the mental attitude of the physician should be that of everlasting consideration for the patient; he should be constantly mindful of her condition; he should recognize the fact that a great number of women feel embarrassed as soon as the abdomen becomes distended. A few words and a little encouragement will let her understand with what pride—with what interest and solicitation—she is looked upon.

The physiology of pregnancy borders so closely on pathology that at times it is difficult to say when the one has overstepped the other, therefore every pregnant woman should be considered a pathological entity. Obstetrics is surgery, according to this author. A surgical condition exists where there is the letting of blood. Where there is letting of blood there is an open wound which is liable to become infected. Regarding the fitness of a physician, Fitzpatrick states that no man after graduation and attendance on a few hundred cases of obstetrics should assume that he knows so much about the subject that it is not worth while to attend obstetrical clinics. The need of sterile supplies even in home deliveries is strongly urged. The article was ably discussed by several members.

HUNTOON takes up the care of the pregnant woman, emphasizing that prevention is the essential feature during this period. The patient should be seen every four weeks during the first seven months, and at least every two weeks during the last months of pregnancy. Personal hygiene, clothing, diet, and the care of the nipples are then discussed.

RICHARDS discusses the care of the patient during the puerperium, emphasizing the importance of thorough cleansing of the vulva, after delivery with some antiseptic solution, and the placing of a cotton pad over it. Lacerations should be sought and repaired. The uterus should be carefully watched at five-minute intervals to determine the involution. The indiscriminate use of ergot is condemned. He does not deem the abdominal binder essential in every case—only where the abdominal wall is greatly relaxed. The treatment of after-pains, the diet, the care of the nipples and the regulation of the bowels and bladder are then taken up. He does not believe that it is advisable to allow the patient to leave the bed before the tenth day. EDWARD L. CORNELL.

#### PUERPERIUM AND ITS COMPLICATIONS

**Vineberg, H. N.: Septic Puerperal Infection, Diagnosis and Treatment.** *Canad. M. Ass. J.*, 1914, iv, 201. By Surg., Gynec. & Obst.

The author states that cultures should be made in every case of suspected puerperal infection, but he does not place much confidence in these findings, because of the fact that a non-hæmolytic streptococcus may revert into the hæmolytic variety and *vice versa*. He believes that temperatures should



be taken B. i. d. per rectum in all cases and that when fever is found an immediate search should be made for the cause.

If the bowel is full of faecal material obstructing drainage from the uterus, it should be emptied, after which the temperature will usually return to normal. A careful examination of the perineum and generative tract should next be made, sutures cut if necessary and any tears in the cervix carefully gone over. If nothing is found the uterine cavity should next be explored by the finger for, in the author's opinion, 90 per cent of puerperal infection arises in the uterus from placental remnants.

When remnants are found, the author believes in a mechanical removal by the curette or some other means, and very strenuously disagrees with Watkins' method of packing the uterus thus causing it to contract and expell the contents. Vineberg believes this prevents free drainage and may cause a generalized infection. After curettage, he usually irrigates the uterus with a weak iodine solution or 50 per cent alcohol and then lets it alone. The curette should be used only when placental remnants are palpated by the finger.

In cases of thrombophlebitis, the author thinks that the important diagnostic signs are the great range of the temperature, 5° to 6°, and the steady pulse, 80 to 120. He has ligated the affected veins in nine cases and thinks the best results are obtained when a total hysterectomy is also done. The author advises hysterectomy, post-partum in cases where there is an infected submucous fibroid or in purulent metritis. In his experience only 10 per cent of cases need surgical interference. EUGENE CARY.

**Traugott, M.: Etiology and Prophylaxis of Endogenous Puerperal Infection** (Über die Ätiologie und Prophylaxe der Endogenen puerperalen Infektion). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1869. By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

A report is given of the systematic bacteriological examination of the vaginal secretion of 1,994 pregnant women, 1,851 of whom were delivered spontaneously, 75 by manual extraction in the breech position, 68 by operation through the natural route. Those who had an axillary temperature of more than 38 during the puerperium were as follows: Of the spontaneous deliveries, 9.57 per cent without streptococci, 8.53 per cent with non-hæmolytic streptococci, 10.17 per cent with hæmolytic streptococci; of the breech presentations 10.71 per cent without streptococci, 8.88 per cent with non-hæmolytic streptococci and none with hæmolytic streptococci. In operations by the natural route, 25 per cent were without streptococci, 17.14 per cent with non-hæmolytic streptococci, and one patient with hæmolytic streptococci had a rise of temperature one day to 38.5.

All of the women, with the exception of those who were delivered by operation, were examined only per rectum with sterile gloves. From this it appears that in the prognosis of the puerperium of

pregnant women without fever, examined only per rectum, it is a matter of indifference whether there are streptococci in the vaginal secretion before delivery or not. Neither does the number of streptococci found make any difference. The streptococci in the vaginal secretion of pregnant women play a very subordinate part as compared with other factors.

The author doubts the value or necessity of Zweifel and Schweitzer's irrigations of the vagina during pregnancy with 5 per cent lactic acid, as there was no difference in the puerperal morbidity of pregnant patients with streptococci, who according to Schweitzer should have been treated by this method, and those without. Insufficient lactic acid irrigations seem to increase the morbidity during the puerperium, for Schweitzer had 22 per cent morbidity among such patients. Even the disappearance of streptococci from the vaginal secretion cannot always be attributed to the irrigations; among 48 pregnant patients the streptococci disappeared in 11 cases in from 5 to 31 days without any treatment. K. HOFFMANN.

**Montgomery, E. E.: Puerperal Sepsis and the Present Methods of Treatment.** *Penn. M. J.*, 1914, xvii, 425. By Surg., Gynec. & Obst.

The author emphasizes the importance of making a correct diagnosis of sepsis and determining the particular forms of infection; i. e., sapremic or septic.

The use of the curette is discouraged because it opens new avenues of infection. Decomposition products may be removed digitally, if there is no peritoneal nor periuterine inflammation. The patient is put in the Fowler position; a purge given occasionally; nourishment should be of the highest nutritive value with as little waste material as possible; elimination is promoted by the continuous instillation of salt water per rectum, and ice kept on the abdomen to limit the extension of the inflammation and facilitate evacuation of the uterus by inciting muscular contraction. Hot fomentations are substituted for ice in the later stage to hasten absorption of the exudate. Pus accumulations are evacuated surgically if necessary. Medication is given hypodermically as far as possible to avoid disturbing the alimentary canal; strychnine, ergot, and atropine as indicated.

Fresh anti-streptococcic serum in initial doses of 10 to 20 cubic centimeters and 10 cubic centimeters every twelve hours for two days is advised until its efficiency is determined.

The résumé is that (1) "the diagnosis of puerperal sepsis established, the aim of treatment must be conservation of the vital forces through rest, judicious feeding, stimulation or elimination, and the intelligent promotion of immunity. (2) The employment of the curette and intra-uterine treatment is inconsistent with the above consideration. (3) Serum given fresh and in good quantity is of value. The administration of stock vaccines should be condemned. The value and place of the au-



togenous vaccine is yet to be determined. (4) Surgery, except for drainage in suppurative peritonitis, should not be employed in the acute stages. The localization of the infection may later necessitate incision for drainage or resort to sacrificial operations involving tubes, ovaries and even uterus."

D. H. BOYD.

### MISCELLANEOUS

**King, W. W.: The Serum Reaction in Pregnancy and Cancer, by the Coagulation Method.** *J. Obst. & Gynec. Brit. Emp.*, 1913, xxiv, 296.

By Surg., Gynec. & Obst.

The technique employed by King is essentially that of Abderhalden. His conclusions are as follows:

1. The test is positive all through pregnancy.
2. It may be negative in pregnancy in the presence of severe septic infection.

3. With certain limitations it is possible to diagnose carcinoma and sarcoma, but not to differentiate them from pregnancy because the ferments are not absolutely specific.

4. The coagulation method is useful because it does not require special apparatus; it avoids the errors associated with faulty dialyzers; and it is not so susceptible to slight hæmolysis of the serum. This method, however, requires at last 20 hours' incubation and the use of 0.3 ccm. of a 1 per cent solution of ninhydrin in order to obtain positive results in pregnancy.

CAREY CULBERTSON.

**Faught, F. A.: Significance of Elevated Blood-Pressure in Pregnancy.** *J. Am. M. Ass.*, 1914, lxii, 528.

By Surg., Gynec. & Obst.

The author calls attention to the fact that high blood-pressure may occur in pregnant women without any concomitant signs of toxæmia just as is seen in chronic kidney cases. These should be separated from the pregnant cases showing even a moderately elevated blood-pressure accompanied by some or all of the familiar signs of toxæmia of pregnancy. The former need special watching but they should by no means be looked upon as subjects for surgical interference. This indicates the importance of careful clinical observation in addition to blood-pressure studies. In this connection the urine will often, but not always, serve as a valuable guide.

In toxæmia cases, the gradually rising pressure, the persistent nausea, the head pains and the characteristic urinary findings all point to an acute and progressive condition. Two illustrative cases are reported.

EDWARD L. CORNELL.

**Nebesky, O.: Caput Succedaneum** (Beitrag zur Kenntnis des Caput succedaneum). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxviii, 655.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A 37-year-old IX-para after seven hours' labor delivered a child with an enormous caput succedaneum 5½ cm. in height, 27 cm. in circumference, and 6 to 7 cm. in diameter. It was surrounded by a marked groove due to compression. It had almost

disappeared at the end of four days and after 18 days the necrotic tissue was completely cicatrized. The author believes this abnormal swelling was due to the internal os, the circular muscle and connective-tissue bundles of which act as an unyielding ring on the presenting part of the child, and by its rigidity causes injury to the tissues, even when the pains are weak because of the long duration of labor. The acquired rigidity of the tissues, he thinks, is due to chronic metritis.

MORALLER.

**Giuffrida, F.: A Plea for More Pelvimetry.** *J. Rec. Med.*, 1914, lx, 541.

By Surg., Gynec. & Obst.

The author makes a strong plea for the greater use of the pelvimeter. In comparison, he calls attention to the fact that carpenters who do good work will not trust to luck. They employ calipers and measurements before cutting lumber, while many physicians guess the pelvic measurements of a woman who is about to undergo a hard ordeal. It is impossible to know what will occur where so many possibilities exist, especially in primiparæ. Any one practicing obstetrics regularly will some day meet with a badly contracted pelvis and, if measurements have not been taken, it will be greatly regretted. Every woman should be measured. The pelvimeter is not an expensive instrument and takes up but little room.

EDWARD L. CORNELL.

**Ilyin, T.: Experimental and Clinical Study of Air Embolism in Obstetrics** (Die Luftembolie in der Geburtshilfe. Experimentell-klinische Untersuchung). *Arch. f. Gynäk.*, 1913, ci, 273.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

From experimental and clinical study the author doubts the correctness of the theory of air embolism in obstetrics,—at any rate, it seems to be greatly exaggerated,—and is not so certainly decided that it should be accepted without further investigation.

Each case should be subjected to searching analysis. The same rules must be followed in all cases and every autopsy in a suspected case of air embolism must be carried out in the same way. All the blood-vessels leading to and from the heart must be ligated separately and the lungs and heart removed. The heart cavities, the pulmonary arteries and their branches should be opened in a deep vessel under water after ligation of the arteries and washing out of the air vesicles on the surface. In this way attention will be drawn to the way in which the air is expelled, whether as a thin emulsion, as foam, or as large air bubbles. The amount and kind of air in the pulmonary artery and the intensity and extent of the pathological changes in the lungs must serve as a basis for the post-mortem diagnosis of air embolism.

JAEGER.

**Oppenheimer, H.: Pituitrin in Obstetrics** (Pituitrin in der Geburtshilfe). *Arch. f. Gynäk.*, 1913, ci, 501.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In the course of a year and a half, 400 cases were treated. Pituitrin and pituglandol were used sub-



cutaneously and intramuscularly, generally in doses of 1 to 2 ccm.; no difference could be noted in the effect of the two. The indication for pituitrin is weakness of the pains toward the end of the first and during the second stage. Labor can only occasionally be induced by pituitrin. Several injections of pituitrin do not harm the mother in any way. When given according to indications it produces strong pains in 90 per cent of the cases and brings about spontaneous delivery in 80 per cent—10 per cent of failures must be counted on.

Fifty per cent of the cases treated unsuccessfully with pituitrin during labor show a tendency to hæmorrhage in the third stage and after delivery of the placenta, but in successfully treated cases hæmorrhage and post-partum atony appear after delivery of the child in only 7 per cent. In hæmorrhage during the third stage and post-partum atony a combination of pituitrin and secacronin is recommended. If bleeding continues in spite of this it is generally because remnants of the placenta have been retained. The third stage is shortened after the administration of pituitrin in only a small percentage of the cases; frequently it is lengthened in comparison with the third stage in normal deliveries.

SCHIFFMANN.

**Schnell, F.: The Treatment of Osteomalacia in the Last Fifteen Years, 1898 to 1912** (Die Behandlung der Osteomalacie in den letzten 15 Jahren, 1898 bis 1912). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxv, 179. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author's work is based on 334 cases of osteomalacia from the literature of the past 15 years. Of these, 37 were treated with phosphorus, 105 by castration, among which there were 7 recurrences; 36 with adrenalin; 16 with pituitrin; 1 with antithyroidin; 2 with the milk of castrated goats; 6 with röntgen rays.

The research of recent years has rejected hyperfunction of the ovary as the cause and substituted for it the conception of changes in metabolism from the action of the ductless glands. The relation of the hormones in physiological chemistry is not yet clear, and, therefore, there is no really reliable method in the treatment of osteomalacia. Castration offers the fewest bad results, and is much to be preferred to the treatment with hormones, adrenalin, pituitrin, etc.

GRÜNBAUM.

**Von Fellenberg, R. and Doll, A.: Biological Relations between Mother and Child** (Über die biologischen Beziehungen zwischen Mutter und Kind). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxv, 285. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In order to determine the relations between mother and child the authors examined the blood of the mother, the umbilical cord serum, the blood of the child shortly after birth and also when possible several months later, and also the mother's milk on the seventh day after delivery. In a series of experiments they determined the aggluti-

nating power toward different bacteria and then tested for the presence of normal bacteriolytic substances and compared them in given quantities of serum; they also tested for the content of hæmagglutinins in the blood-cells of rabbits. The result was that they found a marked independence of the child from the mother; the child's body at birth forms normal antibodies independently.

MONHEIM.

**Raubitschek, H.: The Relation of Maternal Diseases to the Organs of the Fœtus and New-Born Child** (Über Beziehungen mütterlicher Erkrankungen zu den Organen der Föten und Neugeborenen). *Beitr. z. path. Anat. u. z. allg. Path.*, 1913, lvii, 345. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author has endeavored to determine under what conditions blood poisons of the mother are transmitted to the fœtus and cause the same or similar organic changes as in the maternal organism.

In two cases of eclampsia there was serious disease of the foetal liver and kidneys, with numerous hæmorrhages in other organs, and in a case of chronic parenchymatous nephritis in the mother there was acute glomerulonephritis in the child; but in a child whose mother had the typical kidney of pregnancy, which is a purely degenerative process, there was no disease. In the experimental part of his work the author tries to confirm and extend his human findings by animal experimentation.

Icterogen was used as a liver poison, and its effect on the mother and fœtus studied, with the result that the liver of the mother could be seriously diseased without that of the fœtus being affected at all. This is probably due to the fact that the whole mass of icterogen was anchored in the mother's liver and did not get into the foetal circulation.

To test injuries of the kidney the author used subcutaneous injections of uranium nitrate and succeeded, in a series of experiments, in affecting the kidneys of the fœtus as well as those of the mother. At any rate, substances are formed as a result of the uranium injury to the mother's kidneys that are absorbed, pass through the placenta, and have a toxic effect on the foetal kidneys.

KNOOP.

**Imre, J.: Prophylaxis and Treatment of Inflammations of the Eye in the New-Born** (Prophylaxe und Therapie der Augenentzündung der Neugeborenen). *Orvoskép.*, 1913, iii, 467. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

At the ophthalmological clinic at Kolozsvár in the last five years 45, or 1.17 per cent of the infants, were treated for gonorrhœa. According to the author's experience this caused unilateral blindness in 5.6 per cent of the cases, bilateral in 2.7 per cent. It is important that treatment begin early. The gonococci must be demonstrated; if there are streptococci also in the secretion the danger to the eye is still greater.

In premature births, twins, and poorly nourished



infants, the disease is more dangerous. Prophylactically, silver acetate is used but that is not sufficient. The mother must be told in order that she may protect her future children.

The eye treatment must be kept up persistently. For the first few days cold compresses should be applied several times a day, and irrigations with three per cent boric acid or potassium hypermanganate; if the cornea is threatened iodine trichloride 1:4000 should be used. If there is infiltration or ulcer of the cornea, the lid should not be inverted in irrigating. If the corneal ulcer is centrally located atropine should be given; if it is peripheral, pilocarpine. In prolapse of the iris pilocarpine is dropped in 2 or 3 times daily. If there is a non-progressive infiltration of the cornea dionin is used, either in the form of powder or as a 3 per cent salve. Good results are often obtained with 1 to 2 per cent collargol salve. The disease generally lasts from 4 to 6 weeks.

BOGDANOVICS.

**Gfoerer, W.: Effect of Obstetrical Depression of the Skull on the New-Born Infant and Its Bodily Development** (Zum Einfluss der Schädelimpression auf den Neugeborenen und seine körperliche Entwicklung). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxv, 101.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Gfoerer objects to the operative treatment of depression of the skull which has recently been recommended by various authors. He advocates a thoroughly conservative treatment, and objects even to manipulation of the skull to replace it or to drawing it out with a corkscrew, especially if there are no cerebral symptoms, as in that case it cannot have any effect on the later bodily and mental development of the child.

The good results obtained by various authors show that the procedures mentioned above are not especially dangerous. But even when there are cerebral symptoms they are not amenable to surgical treatment. He reports 26 cases from the Würzburg clinic since 1895, and in none of them were there symptoms, such as convulsions and spasticity, to indicate local hæmorrhage; even autopsy did not show injury to the bones or diffuse cerebral hæmorrhage; so that surgical intervention could have done no good.

WIEMER.

**Durham, R.: Obliterating Cholangitis Associated with Hæmorrhage of the New-Born.** *Long Island M. J.*, 1914, viii, 92. By Surg., Gynec. & Obst.

The author briefly reports a case of this condition, as follows: The babe, a boy, was delivered normally and weighed seven and a half pounds. The family history was negative. Three other children born to these parents are living and well. The baby appeared normal at birth. On the second day he was markedly jaundiced, but the stools and urine were normal. He nursed normally every two hours.

On the third day the icterus was deepening and the cord dressings were markedly stained with bile. On the fourth day the baby was fretful in the morning, the bowels moving five times with black stools. The urine stained the napkins green. In the afternoon, while nursing, he was seen to become rigid for a moment and three drams of blood flowed from the nose. The temperature was 99.6°; respirations normal, but forced; there was some bloody mucus in the throat; the pulse was small and about 150; the pupils were equal. The baby was in a stupor. Examination showed a few râles at the base of both lungs. Three hours later another hæmorrhage appeared from the nose and mouth. There was no cyanosis. Death followed.

The post-mortem findings showed deep jaundice of the conjunctivæ and skin. Rigor mortis was marked. There was a large hæmorrhagic area on the forehead. All the internal organs were deeply jaundiced. The stomach contained several drams of blood. There were numerous adhesions about the gall-bladder and ducts, duodenum and pancreas. About the gall-duct these adhesions presented a matted appearance. After careful dissection, the gall-bladder was opened and 20 drops of bile-stained mucus were found in it. The gall-ducts were identified as tiny, threadlike tubes, through which a very fine needle could be passed with effort. It appeared that these ducts were not functioning. The liver was not markedly enlarged.

EDWARD L. CORNELL.

**Mosbacher, E.: Clinical and Experimental Study of the Effect of Thyroid Substance on Labor Pains** (Klinisch-experimentelle Beiträge zur Frage: Thyreoida und Wehentätigkeit). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxv, 362.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Experiments were made in feeding thyroid substance to 30 pregnant guinea pigs and 2 cats, with the result that all of the animals except two aborted. This may be attributed to its effect on the fœtus or to a direct action on the musculature of the uterus. To solve this question the effect of thyreoglandol, prepared in the same way as pituglandol, was tried on the uterus of the rabbit, after previous experiments had shown there was no cardiovascular effect. Many of the experiments were negative but some showed that thyreoglandol can cause contractions.

It is worthy of note that preparations that did not react at first, reacted after the addition of very small amounts of adrenalin. This confirms the hypothesis that thyroid extract and adrenalin act antagonistically. Experiments on women showed that there was a strengthening and increase of the pains in 12 cases out of 41 with thyreoglandol, and when adrenalin was added in 7 cases out of 12, but that it had no practical effect in hastening the delivery.

KERMAUNER.



# GENITO-URINARY SURGERY

## KIDNEY AND URETER

**Oliva, C.: Variation in the Adrenalin Content of the Suprarenal Capsules after Different Anæsthetics** (Variation du contenu en adrénaline des capsules surréniales après l'anesthésie). *Lyon chir.*, 1914, xi, 11. By Journal de Chirurgie.

The work of Wiesel and Hornowski abroad and of Pierre Delbet, Herrenschmidt, and Beauvy in France has shown the anatomical and functional changes produced in the suprarenal capsules by anæsthesia, and especially by chloroform. Oliva takes up this study anew in experiments on the dog, comparing the action of chloroform and ether.

In his first series of experiments Oliva found that the adrenalin content was much higher in etherized animals than in those anæsthetized with chloroform, the amount being double and sometimes even more. The difference was found in animals that died under the anæsthetic, and in those killed at various periods after the end of the anæsthesia it went on increasing progressively; at the twelfth hour the adrenalin content had become normal in the etherized dogs while it remained very low in the chloroformed ones.

These results confirm the prolonged and late effects of chloroform, while the effect of ether stops very quickly after the end of its administration.

In a second group of animals the author gave an injection of morphine before the anæsthesia. The dogs killed four hours after the anæsthesia was administered had a much larger adrenalin content after chloroform than after ether; on the contrary those killed at the end of 11 hours had a normal adrenalin content after etherization, and a very low one after chloroform; it seems, therefore, that morphine does not appreciably change the effect of ether on the suprarenals, while it temporarily suspends the toxic effects of chloroform, but these effects appear after the morphine is eliminated.

In a third series of experiments one suprarenal capsule was removed before the administration of the anæsthetic and the other one afterwards, so their adrenalin content could be compared. A great decrease was found, whatever the anæsthetic employed, there being no appreciable difference in the effects of chloroform and ether. These results are less conclusive, for the traumatism due to the first capsulectomy must be taken into account. The control animals who were not anæsthetized also showed a marked diminution in their adrenalin content some hours after the removal of the first capsule. Taken as a whole, Oliva's experiments confirm once more the greater toxicity of chloroform as compared with ether. CH. LENORMANT.

**Brooks, H.: Hypernephroma with Long-Standing Symptoms of Adrenal Deficiency, with Scleroderma and Sclerodactylia.** *J. Cutan. Dis.*, 1914, xxxii, 191. By Surg., Gynec. & Obst.

Brooks presents a case of hypernephroma which is unique in several particulars. The patient, a musician, began at about the age of 15 to practice incessantly on the piano and continued to do so until his death; even at the expense of strength and health he practiced long hours in cold, unheated rooms. He suffered for many years with frequent attacks of tonsillitis and was never healthy.

Many of the most prominent physicians, both in Europe and America, had examined the case and different diagnoses had been made, the last one of which was chronic fibroid phthisis with tuberculosis of the mediastinal and retroperitoneal glands. The Moro skin reaction for tuberculosis was strongly positive, although tubercular bacilli were never found. X-ray plates showed a mediastinal mass and pulmonary invasion; there was marked resorption of bones of the terminal phalanges of the fingers, and, in some members, almost complete disappearance of this portion of the bone.

Flatness extended from the fifth rib down on the left side, with râles and occasional disseminated areas of bronchial breathing alternating with patches of diminished breath sounds. Similar sounds were also present on the right side from the sixth rib down to the liver dullness. Breath sounds were exaggerated over the apices, numerous moist râles were present over the entire chest; the heart sounds were weak, but there were no murmurs; deglutition was difficult; the pulses were weak, but equal and synchronous.

Later in the history of the examination of the case a soft mass was found on the external superior aspect of the humerus. The patient continued to grow weaker and weaker until he was compelled to give up his position.

From time to time, he suffered with severe attacks of coughing with expectorations of fibrinous clots of blood. Cyanosis became progressively marked and the retrosternal mass increased in size. Difficulty of swallowing likewise increased. His death occurred a few months later, apparently as a result of exhaustion.

The autopsy showed a large indefinite mass in the post-mediastinal position united with the roots of both lungs, and the pericardial was displaced to the left. The left lung was largely atelectatic and was so carnified as to almost sink in water. It had areas of tumor invasion apparently extending up from the lymph-nodes. The mediastinal mass was made up of nodular but intimately adherent masses,



pinkish white. There was no tumor involvement of any other organ except the kidneys and adrenals. The right adrenal was almost completely replaced by a firm pinkish white neoplasm measuring 2 x 1 and 5 x 3 centimeters in diameter. The parenchyma had undergone almost complete atrophy. The medulla of the left adrenal was similarly involved by the growth, but the growth could nevertheless be easily separated so that it did not seem to involve the parenchyma of the kidneys. Microscopical examination of this tissue showed it to be one of those peculiar endothelial tumors classified under the head of hypernephroma.

The pathological report of the author does not seem to show anything more than is usually found in these adrenal tumors. The author makes the point that diagnosis should have been made earlier but it was not suggested or even thought of by any physician. He believes that the extreme exhaustion continuing through many years should have led to an investigation of the adrenals.

During the period between the times when the patient was forced to stop work and the time of his death the scleroderma which was evident on the fingers disappeared, the cracks healed up and the thickness of the skin became noticeably less. In the author's opinion the importance of the case is based on the shortening of the bones of the fingers, but the X-ray showed no other bony sclerosis or atrophy, and he believes that if this bony affection of the fingers was directly connected with the disease of the adrenals, there would be other evidence on the skeleton. He, therefore, thinks that this ductless gland disease had nothing whatever to do with the bone changes; that they were in all probability due to the incessant use of the ends of the fingers in striking the keys of the piano extending over a period of from fifteen to thirty-four years of age, and this point is the author's excuse for reporting the case. He believes that the atrophy of the bones of the fingers was not due to the disease of the adrenals, but was an occupational condition, as was also the scleroderma at the ends of the fingers.

A. C. STOKES.

**Frouin, A., Meyer, A., and Rathery, F.: Effect of Temporary Ligation of the Renal Veins** (Sur les effets des ligatures temporaires des veines rénales). *Compt. rend. hebdomadaire de la Société de biologie*, 1913, lxxv, 528. By *Journal de Chirurgie*.

In a series of experiments made on dogs in collaboration with Chesie, Frouin found after ten minutes ligation of the renal veins: (1) External epilepsy manifested by convulsions and internal epilepsy manifested by vasoconstriction of the abdominal organs; (2) some cases of death within 48 hours after the ligation; (3) slight histological lesions of the kidney, and especially of the liver.

Cassel tried to reproduce these results and failed, so Frouin, Meyer, and Rathery tried the experiments again and did not get the same results as the first time, only the histological lesions of the kidney

and liver being constant. They could not attribute the difference in results to the anæsthesia, the method of operation, nor to the feeding of the animals, and concluded that only the histological lesions, particularly those of the liver, are constant in temporary ligation of the renal veins, but that the epileptiform attacks and death are inconstant phenomena, the cause of which they do not understand.

PIERRE CRUET.

**Bloom, J. D.: Kidney and Urinary Bladder Stones Peculiar in Kind and Formation.** *Urol. & Cutan. Rev.*, 1914, xviii, 123.

By Surg., Gynec. & Obst.

The writer says that salts of various forms, almost in the solid condition, may occur in the bladder without the formation of stone. These crystalline substances require a colloid to coalesce the molecule. Certain salts, as for instance, uric acid, may be thrown down and carried out with the urine without the formation of stone. The author says that it requires in addition to the presence of these crystalline substances some irritation to produce albuminoid or colloid of one kind or another. They may be produced in the bladder by any substance, such as a bullet, blood-clot, masses of bacteria, or a necrotic tissue which has been shown to be the nucleus of stone.

The nucleus of renal calculi of infancy is urate of ammonia. Phosphatic calculi are derived chiefly from lime and magnesium salts in excessive alkalinity; the earthy phosphates are precipitated. The phosphate of lime and magnesium unmixed is also deposited. Faulty catheterization, defective innervation, or any obstructive condition may be contributory.

The author states that there is a sympathy between the kidneys physiologically and pathologically. In the one instance this is of a reflex nature, and in the other it is in the nature of a compensatory change. Therefore, the location of a stone is not exactly definite. As a rule bladder stones occur singly, but one case has been reported where three hundred and seven stones were found in the bladder.

The shape of calculi in the bladder is due to the contractions of the bladder. They are usually round, but may take on various grotesque shapes. Oxalate stones are of the "mulberry" formation. Stones are more frequently found in the male, especially those leading a sedentary life.

That functional conditions contribute to stone formation the author thinks is undoubtedly true. He submits some specimens, one in the form of a duck's foot and some specimens of "mulberry" calculi, which are interesting.

A. C. STOKES.

**Orr, H. W.: The Differential Diagnosis between Kidney Lesions and Pott's Disease; Tuberculosis of the Spine.** *Urol. & Cutan. Rev.*, 1914, xviii, 132. By Surg., Gynec. & Obst.

Orr describes the differential diagnosis between kidney lesions and early Pott's disease. He empha-



sizes the necessity of careful physical examination to determine the presence of Pott's disease, and thinks that by careful study an early diagnosis of this disease should be made more frequently than it is.

Judson and others have called attention to the fact that the symptom of early Pott's disease in children is frequently referred to as "stomach-ache." Moreover, he says the muscle rigidity about the point of disease in the spine is frequently so extensive as to communicate itself to the muscles of the flanks and abdomen.

The gait and stooping position of the child with spinal tuberculosis are usually if not almost always characteristic, and if a urinary examination is made it will point to a differential diagnosis between Pott's disease and infections of the kidney.

The author believes that a more extensive use of the X-ray should be made in these diseases. The very great importance of early conservative treatment in spinal lesions makes an early diagnosis imperative. He believes that the answer to this problem at the present day, as to the differential diagnosis between kidney and Pott's disease, must lie in a more careful examination, more accurate observation, and appreciation of symptoms.

A. C. STOKES.

**Kindberg, L.: Study of the Kidneys in the Tubercular** (*Études sur le rein des tuberculeux*). *Thèses de doct., Par., 1913.* By Journal de Chirurgie.

Kindberg's report is filled with new facts and ideas and should be read by all who are interested in this question. The subject was opened by Chauffard's discussion of tubercular nephritis and by the controversy between Landouzy and Bernard on one side and Brault on the other in regard to the chronic parenchymatous nephritis of the tubercular. The former assumed that this condition really existed, the latter that it was only a symptom of renal ankylosis.

It has been established that the kidneys of patients with pulmonary tuberculosis are functionally and anatomically normal in the majority of cases. The tubercular toxins, if they exist in the circulation, do not cause unmistakable toxic lesions in the kidneys. As to the bacilli in the circulation, they may produce tubercles, generally isolated, without alterations in the adjacent parenchyma. A condition often found is amyloid degeneration of the kidneys, which seems to attack the liver, spleen, and suprarenals before the kidney, and is generally more pronounced in those organs. Bernard, Castaigne, and others believe that it is always accompanied by very marked lesions of the epithelium of the convoluted tubules and is therefore always associated with a nephritis, which is not the cause of it, but is due to the same etiological factors.

Kindberg showed by histological examination that the tubes were relatively intact, but showed hypertrophy, irregular swelling, and a clear appearance of the cells. This seems to correspond to the

hypersecretion which is observed clinically. In fact, in these cases there is a peculiar functional symptom-complex, consisting in considerable lowering of Ambard's coefficient, and a lowering of the chlorides of the serum below the normal, though there is sufficient chloruria. This syndrome seems to correspond to an exaggeration in the power of concentration of the kidney. It is very early and enables one to make a diagnosis of amylosis before the appearance of marked albuminuria and oedema. It is not due to the amyloid condition of the kidney itself, but represents the reaction of the kidney, thus far little involved, to the visceral amylosis and the condition of the blood.

Is there a true chronic nephritis of tubercular origin? Not every case of chronic nephritis in a tubercular patient is caused by the tuberculosis, and even if inoculation is positive an ordinary nephritis with generalized lesions is not necessarily due to Koch's bacillus, but it is nevertheless true that the syndrome of nephritis may depend on massive tubercular infiltration of the kidney. Atypical necroses may be observed, interstitial infiltration without follicles, and especially cicatricial sclerosis with the lesions definitely localized which sometimes cause the syndrome of mixed nephritis. These are special cases which do not appear to be closely related to ordinary Bright's disease.

Finally, there may be peculiar acute lesions of the kidneys, not hitherto published, found in tubercular patients who have died suddenly without clinical reactions, and at the autopsy diffuse subacute lesions have been found such as intense congestion of the renal cortex and various types of necrosis of the cells and tubules. Cases of veritable acute terminal nephritis have also been found in tubercular patients; also cases of transitory acute nephritis of the hæmorrhagic type which have recovered without leaving any traces. To explain these latter cases the idea must be accepted of a special reaction of the organs to a second tubercular infection, a special form of anaphylaxis, still so little understood in France except in relation to vaccines. In these cases of generalized acute nephritis there is a special sensitiveness created by the first inoculation of tuberculosis. They always occur in patients with pulmonary tuberculosis in the course of development. In these patients a reinoculation with bacilli and perhaps also with soluble toxins, by a mechanism which must be determined in each case, causes the anaphylactic reaction which brings about the different types of acute nephritis mentioned, depending on its intensity.

On the whole, in this important work there is an attempt to restrict the term "chronic tubercular nephritis" to the types where the influence of the tuberculosis can be readily established. Entirely original points are the description of the urological symptom-complex in amyloid degeneration of the kidney and the acute anaphylactic reactions of the kidney in tuberculosis, hitherto almost completely unknown.

AMEUILLE.



**Alessandri, R.: Can Renal Tuberculosis be Cured and the Function of the Kidney Preserved** (La tuberculose rénale peut-elle guérir avec conservation de la fonction du rein)? *Folia urol.*, 1913, viii, 286. By Journal de Chirurgie.

The question as to whether renal tuberculosis can be cured by medical treatment without the organ losing its function must at present be answered in the negative. A few surgeons maintain that there are exceptions to this rule, but these exceptions, even if they can be demonstrated, are rare.

Observation has, moreover, shown that renal tuberculosis is subject to remissions, sometimes of very long duration, due, not to recovery, but to the walling off of the ulcerocaseous focus. Carlier, Desnos, and Heitz-Boyer have cited cases of this kind which show that the disappearance of renal pain, pyuria, and bacilluria may result from a "partial exclusion" of the kidney and not from the definite recovery of the tubercular focus. So that the kidney which had been diseased may show a clear urine which does not contain pus nor Koch's bacilli and is not toxic for the cobra, and is almost as rich in extractive substances as that of the healthy kidney, when, as a matter of fact, a part of its parenchyma is transformed into a closed cavity the walls of which contain tubercles in a latent state which may reawaken at any time and reinoculate the bladder and destroy the organ which had been supposed to be cured. He reports two cases.

A woman of 45 had had bladder trouble and pyuria for two years. A hypogastric incision was made and an area of soft fungosities removed from around the left ureteral orifice. There was rapid recovery and complete disappearance of bladder symptoms. Histological examination and inoculation of the cobra showed that the fragment removed was tuberculous. Five years later the patient returned complaining of left lumbar pain. Nephrectomy showed the ureter normal. The upper two thirds of the kidney were also normal. The lower third was merely a sac with caseous contents, and a fibrous wall completely closed without any communication with the pelvis or with the ureter. It is evident that, five years before, the tubercular focus communicated with the pelvis, since the area around the ureter had become tubercular.

At the time of or after the bladder operation the lower calyx was obliterated and the focus thus excluded; whence disappearance of the pyuria and bacilluria. This case is related to those described by Casper, Pawlof and Key, where there was a double ureter draining a kidney. A part of the kidney destroyed by tuberculosis was excluded by obliteration of the calyx of the corresponding ureter. But this case proves especially that the arguments for the spontaneous recovery of kidney tuberculosis with preservation of the function of the organ are not valid. Even if catheterization of the ureter of the supposedly recovered kidney gives a urine without bacilli or pus and not toxic for the cobra, it is not safe to conclude that the kidney is well. Therefore

nephrectomy is at present the only rational treatment for unilateral ulcerocaseous tuberculosis of the kidney. E. JEANBRAU.

**Legueu, F.: Use of the Constant in Nephrectomy for Tuberculosis** (Des applications de la constante à la néphrectomie). *J. d'urol.*, 1914, v, 1. By Journal de Chirurgie.

Three points are to be considered in the application of the ureosecretory constant in nephrectomy for renal tuberculosis: (1) its factors, (2) its interpretation, and (3) its clinical value.

1. The constant depends (a) on the functional disturbance which the tuberculosis itself has produced in the parenchyma of the kidney which it has attacked. As a general rule the constant rises in proportion to the amount of renal parenchyma destroyed by the tuberculosis. But it must be remembered that quite extensive tubercular lesions may exist in a kidney without its function being very much disturbed; (b) on the accompanying or consecutive nephritis, of tubercular or other origin, in the other kidney—the constant rises in proportion to the degree of nephritis in the other kidney; (c) on the compensatory hypertrophy of the healthy portions of both kidneys.

2. The variations of the constant may be considerable in renal tuberculosis. Legueu has observed as maxima and minima 0.989 and 0.057. Three possibilities are presented: (a) The constant is about 0.70; it is normal; the kidneys are functioning well. But the patient may present either perfectly healthy kidneys, or a discrete bilateral renal tuberculosis, or a unilateral tuberculosis with integrity of the other kidney, which has made up, by compensatory hypertrophy, for all that is lost by the diseased one. (b) A constant of 0.100 signifies that the patient has only one kidney or two halves of kidneys. The disease may be bilateral and partial or unilateral and total. It will require catheterization of the ureter to settle this question. (c) The constant is 0.150. Diagrammatically the patient has only one fourth of his kidneys, but functionation may be divided so that operation is contra-indicated.

3. As to a clinical value, when catheterization of the ureters is impossible the constant shows better than any other method the normal functioning of the other kidney, and it allows the surgeon to avoid catheterizing the ureters through the opened bladder or performing an exploratory lumbar incision on the sound side. The constant does not settle the question of the localization of the lesions. This must be done by catheterization of the ureters, radiography, clinical examination, and, exploratory lumbar incision. J. TANTON.

**McCaskey, B. W.: A New Method for Estimating the Functional Capacity of the Kidneys by Forced Elimination of Preformed Urea.** *Med. Rec.*, 1914, lxxxv, 507. By Surg., Gynec. & Obst.

The author considers as inferential and unsatisfactory the information given by the usual



tests for renal function by elimination of foreign substances of which the phenolsulphonaphthalein has proven to be "undoubtedly the most valuable." Each of these tests indicate only one phase of kidney function: the kidneys may be unimpaired or only slightly impaired in the elimination of certain substances and most seriously affected with respect to others. The elimination of urea, being an end-product of nitrogenous catabolism, is one of the most important phases of kidney function, and it is very possible that its elimination runs parallel to that of other nitrogenous waste products and toxins which are responsible for the syndrome of Bright's disease. A method of estimating this phase of functional activity would therefore be more physiological and rational and would furnish more reliable information than the elimination of any foreign substance. With this object in view McCaskey adopted the following technique:

About 6 A. M. the bladder is emptied. Two hours later the urine is collected, and the patient then is given 30 grams of urea, dissolved in 4 or 5 ounces of water. Just before taking the urea, the patient drinks one-half of six ounces of thin cereal gruel, taking the other half immediately after the urea. No other breakfast is eaten. The urine is then collected every two hours for twelve to twenty-four hours, the urea determined for each two-hour period, including the two hours preceding the ingestion of the urea. From these data a curve of urea excretion is constructed. Cases with an excretion of much below 20 grams in 12 hours should be regarded as of somewhat limited functional capacity, while one-half this indicates serious impairment.

Contrary to the report of Rowntree and Geraghty, the author finds that the urea does not run parallel to the phthalein. He suggests that the functional capacity of the kidneys for chloride and water excretion should be determined by similar methods in suitable cases.

The above urea method is not for routine use but only for properly selected cases, and especially for therapeutic purposes "in which it is advantageous to know the type of renal block present."

FRANK HINMAN.

**Smith, E. O.: Sudden Death Following Pyelography.** *Am. J. Urol.*, 1914, x, 121.

By Surg., Gynec. & Obst.

The author reports a personal experience in which he injected 20 ccm. of 10 per cent collargol into the pelvis of the right kidney of a woman of 70. About 5 minutes after the removal of the cystoscope the patient died.

The autopsy showed among other things general arteriosclerosis, valvular heart lesions, and bronchitis with emphysema. The kidneys showed a chronic interstitial nephritis with an acute superimposed process. Microscopical section of the right kidney showed collargol in the tubules and in a few cells.

The author concludes that the injection of collargol under pressure into the kidney is sufficient to produce shock and, in the case of this feeble patient, enough to cause the fatal result. He further advises that injections of any preparation into the pelvis of the kidney should be done only by force of gravity.

H. L. SANFORD.

**Ponomareff, S. I.: Operation in Subcutaneous Rupture of the Kidney** (Über den operativen Eingriff bei subcutaner Nierenruptur). *Beitr. z. klin. Chir.*, 1914, lxxxix, 682.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author favors the conservative treatment of rupture of the kidney. The material of the Obuchow Hospital proves that good results can be obtained by this method. In the years 1898 to 1912, 57 patients with rupture of the kidney were treated. Of these 57 patients 3 were discharged without being cured and the further course of the disease is not known. Three patients died; in all of these three cases there were complications in other organs. Operation was performed in only 8 cases. Frank and Michelson, who also treat conservatively, give about the same figures as the author for mortality and necessity for operation.

Operation should be undertaken only when it is necessary to life or when it is reasonably certain that complete recovery can be obtained in no other way: in severe hæmorrhage, in infection of the injured kidney, or tumor formation in the region of the injured kidney if the tumor shows no tendency to decrease in size but rather to increase.

Operation should be undertaken as promptly as possible if there is a suspicion of an intraperitoneal rupture or injury to other organs in the abdominal cavity. If there is no infection of the kidney, operation, if performed, should be as conservative as possible. The fact is emphasized that it is desirable before the operation to test the other kidney thoroughly by catheterization, in case it should be found necessary to perform nephrectomy.

VON HOLST.

**Schischko, Z. P.: Implantation of the Ureters in the Skin** (Einpflanzung der Ureteren in die Haut). *Vrach. Gaz.*, 1913, xx, 1604.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In order to study the question of what changes the kidneys and ureters undergo in implantation of the ureters into the skin the author carried out 37 experiments on dogs: in 23 cases one ureter was implanted, in 12 cases both. In 2 cases after the implantation of the one ureter the other kidney was removed. It was found that there was atony of the ureter as a result of disturbances of innervation from cutting it. The atony, which was observed in 56 per cent of the cases, and which was often coincident with contraction of the skin opening, played a part in the entrance of bacteria into the kidney pelvis. Anatomically the ureter was dilated and its musculature thinned. The dilata-

tion of the ureter was generally associated with dilatation of the kidney pelvis. In 58 per cent of the cases there were inflammatory changes in the kidneys. The cortex, in reality its interstitial substance, was much more affected than the medulla. The infection spread through the lymph-channels of the urinary system.

BRAUDE.

**Judd, E. S.: A Method of Exposing the Lower End of the Ureter.** *Ann. Surg.*, Phila., 1914, lix, 393.  
By Surg., Gynec. & Obst.

Judd describes a method of approaching the lower end of the ureter employed in operating on six cases in the Mayo clinic.

The patient is placed in a moderate Trendelenburg posture and a median incision made from the symphysis to the umbilicus, extending through the fascia between the recti muscles down to the peritoneum. The peritoneum is not opened but brushed back from the bladder for a little distance, the bladder is retracted toward the median line and held firmly by a pair of soft forceps and dissection carried down to the base of the bladder, exposing and freeing the ureter for two or three inches.

In the first case, with diverticulum of the bladder, the bladder was opened, the diverticulum packed with gauze and removed, the bladder closed with the ureter in sight, and two small rubber tissue drains left in the space at the side of the bladder, one of which was removed on the third day and one on the fourth. The entire wound healed by first intention.

In the second case, with stone in the ureter, the ureter was exposed and the stone removed through a slit in the ureter, a rubber tissue drain inserted and removed on the fifth day. The slit in the ureter was not sutured.

In the third case, with stone in the lower end of the ureter, there was also conclusive evidence of appendicitis. In this case the peritoneum was opened, the appendix removed, and the peritoneum closed. The ureter was then exposed, the stone removed and the wound drained as in Case 2. The wound closed entirely in ten days.

In the other three cases the method was used to expose the ureter in extraperitoneal resection of the bladder for cancer.

The author states that thus far the technique seems to have some advantage over the other methods, especially for the removal of stone.

W. A. CERSWELL.

**Sejournet, P.: Ureterorrhaphy in Total Section of the Ureter; Technique and Results of Operation** (De l'urétérorraphie dans les sutures totales de l'uretère; technique et résultats opératoires). *Thèses de doct.*, Par., 1913, Dec.

By Journal de Chirurgie.

Sejournet gives a good general review of the subject with numerous illustrations and 74 cases carefully classified according to the method of operation. He describes the different methods of

suturing the ureter, especially that used by Proust and Buquet with such success in a difficult case.

When the length of the ureter permits, Sejournet prefers end-to-end anastomosis of the ureter, using the same technique as Carrel uses in the suture of blood-vessels. Using Kirby's needles No. 16 and No. 700 linen thread, or silk, the coaptation is perfect and the closure absolutely water-tight. He gives in great detail four cases of Fauchet's which are an argument for this method. It is advisable to protect the suture with parietal peritoneum or a little fat or omentum. A small drain is useful. The results are excellent, and the author believes any surgeon would do well to follow the example of Fauchet, who resected a small segment of the ureter which was adherent to a tumor.

GASTON PICOT.

### BLADDER, URETHRA, AND PENIS

**Peterkin, G. S.: Scalpel Surgery of Tumors of the Bladder.** *Surg., Gynec. & Obst.*, 1914, xviii, 380.  
By Surg., Gynec. & Obst.

The author's aim is to demonstrate that the general principles of surgery, as applied to malignant tumors of other parts of the body, are applicable to tumors of the bladder, and that the great mortality resulting from radical operations on the bladder at the present time is due to the fact that these operations are too long deferred, because it is not generally recognized that the anatomical locality, structure, and physiological functions of the bladder are such as to permit wide cutting of the affected area.

Evidence is presented to prove that it is not dangerous to open the peritoneal cavity to get a better view of the operating field; that methods of diagnosis to date are not sufficiently accurate to ascertain absolutely whether or not a tumor of the bladder is malignant unless the tumor is excised *in toto*. Therefore, early diagnosis demands that all tumors be regarded as malignant.

Causes of death, pre-operative and post-operative, are given, means of prevention advanced, and general technique of operation outlined. The argument is maintained that the only rational place of transplanting the ureters is in the remaining portion of the bladder wall or in the lumbar region. This simplifies the operation, and prevents one of the most frequent causes of post-operative mortality—infection of the kidneys—inasmuch as any renal infection can be successfully treated, which is not possible when the ureters are concealed in some other part of the body, as the intestines.

An apparatus for receiving the urine from the urinary opening in the lumbar region, which prevents odor and keeps the patient dry, is shown, and its value demonstrated in the case of a man on whom total extirpation was performed and the uterus transplanted in the back. This man has worn the apparatus without inconvenience, and has been able to follow his occupation as attendant in the acute mania ward of an asylum for over three years.



**François, J.: Incrusted Cystitis** (La cystite incrustée). *J. d'urolog.*, 1914, v, 35.

By Journal de Chirurgie.

Incrusted cystitis is an ulcerative inflammation of the bladder wall with deposits of calcium phosphate on the surface and in the walls of the ulcer. It may appear in the course of acute cystitis, but in the majority of cases (13 out of 16) it follows a long period of chronic cystitis—3 to 5 years. It presents the usual symptoms of cystitis and sometimes also débris of the incrustations are discharged, or even true gravel. The urine has an ammoniacal odor and is generally alkaline. The capacity of the bladder is reduced and varies from 100 to 30 ccm. The concretions discharged are in the form of yellowish or brownish scales, rough on the surface adherent to the bladder, smooth on the opposite side. Retention of urine and pyelonephritis are frequent complications.

The cystoscopic picture varies according to the thickness of the layer of incrustation. It may show simply yellowish, non-elevated patches with irregular borders; it may give the impression of a thin layer of cotton on the mucous membrane, or it may be thick and elevated, resembling a tumor or a calculus and giving the impression of a white sponge in the bladder. These incrustations are multiple and distributed over the trigone, the fundus, and the lower part of the bladder cavity. The surrounding mucous membrane is red, oedematous, or even ulcerated.

The favorite location is the trigone, the region of the ureters, or the neck; they may be localized on a hypertrophied prostate lobe. Local necrosis of the mucous membrane is the first phenomenon, and the calcareous incrustation is secondary. It does not recover spontaneously. Curettage by the natural route, or even after cystotomy, often fails to prevent recurrence and should be replaced by excision of the plaques followed by suture.

J. TANTON.

**Farnarier: Treatment of Stubborn Cystitis by Iodine Fumigation** (Le traitement des cystites rebelles par l'enfumage iodé). *Arch. urol. clin. de Necker*, 1914, i, 353.

By Journal de Chirurgie.

Farnarier adds 19 cases to those already published in his thesis on this subject. He describes in detail the technique of his method, by which he has now treated 32 cases of cystitis in which no improvement could be obtained by any of the usual methods of treatment.

The results obtained are as follows: 11 complete recoveries, including 8 cases of acute cystitis of the base, 1 of acute cystitis in a prostatic case, 2 cases of tubercular cystitis after nephrectomy. Improvement was noted in 12 cases, including 8 of tubercular cystitis, 1 of calculous cystitis, 1 of cancerous cystitis, 2 of cystitis of the base. Sedative action was noted in 4 cases of tubercular cystitis. There were 4 unsuccessful cases, including 1 case of chronic cystitis in a prostatic case, 1 of chronic

cystitis in a tabetic case, 1 chronic cystitis from an unknown cause, and 1 tubercular cystitis. There was one case of temporary exaggeration in a slight cystitis of the neck. Iodine fumigation is infinitely less painful than the injection of phenolized glycerine by Ronsius' method, and it constitutes one more good method in the treatment of stubborn cystitis.

MAURICE CHEVASSU.

**Deavor, T. L.: Chronic Retention of the Urine; Twenty-Eight Years of Catheterization.** *J. Am. M. Ass.*, 1914, lxii, 1012.

By Surg., Gynec. & Obst.

The writer reports a case of continuous catheterization in a female, extending over a period of twenty-eight years. At the age of fourteen, having previously been perfectly well, she was seized with severe hypogastric pains with inability to void. The attending physician finally resorted to catheterization which has been continued ever since, although all other known methods were employed from time to time to relieve the condition, without success. On her last admission to the hospital nothing in the past history, physical or cystoscopic examinations could be found to account for the retention. There was a well-defined spasm of the internal meatus. The urine showed a mild chronic cystitis and the bladder held about 3 ounces. The natural desire to urinate had for years been replaced by severe suprapubic pain.

Because of the length of time the condition had existed, operation was resorted to in order to give the bladder rest, and a suprapubic cystostomy was done. The internal meatus was found small and tense and lacked the usual resiliency and the bladder wall was considerably thickened. After the suprapubic drain was removed a permanent catheter was tied in the urethra and as the suprapubic drainage subsided all the urine came through the catheter. This was allowed to go on for a week when the catheter was clamped off and the urine allowed to accumulate for one hour and then the bladder emptied. This time was gradually lengthened up to five hours when 12 ounces could be retained without discomfort. The original hypogastric pain gradually subsided and the usual desire to urinate returned. Next a smaller catheter was used and urine allowed to escape around it at stated times. Finally the catheter was discontinued altogether. The recovery was perfect.

C. R. O'CROWLEY.

**Thévenot, L.: Attempts at Treatment of Retention of Urine without any Mechanical Obstacle** (Essais de traitement des rétentions d'urine sans obstacle mécanique). *Prog. méd.*, 1913, xli, 651.

By Journal de Chirurgie.

Retention of urine without any obstacle or without even senility is well known, for it has been observed in young subjects, due to a loss of contractile power of the bladder from some unknown cause. In such cases electrical treatment has been tried;



section and even prostatectomy in cases where it has been supposed that the prostate might be the cause. Everything failed.

Le Fur had one successful case by creating a temporary suprapubic fistula. Rochet in two cases, and Cathelin in one, affected a cure by plication of the bladder after subperitoneal dissection by the suprapubic route. Since then Rochet had devised a new surgical operation which consists in surrounding the antero-lateral wall of the bladder with a muscular band formed from flaps of the recti of the abdomen, a band which aims to raise the bladder which has sunk down on its base and to constrict it by lateral compression, flattening it transversely.

Readers are referred to the original for details of the technique of the operation, which has been performed only once with good immediate results, but it has been too recent to permit judgment as to its permanent results.

### GENITAL ORGANS

**Barney, J. D.: Abscess of the Testicle.** *Surg., Gynec. & Obst.*, 1914, xviii, 294.

By Surg., Gynec. & Obst.

Barney says that abscess of the testicle, as distinguished from the epididymis, is very rare. He reports three cases occurring in his own practice, in which no primary focus could be found and where there was no general infection as a causative factor. Orchidectomy was done in all three. In one the bacillus mucosus capsulatus was found in pure culture, in another the colon bacillus. The epididymis was not actively involved in any case.

A pathological report of one specimen showed that the inflammatory process had extended by way of the interstitial tissue.

The author discusses infection of the epididymis and testis and is of the opinion that in the case of the latter organ there is evidence of a selective function as well as an excretory function. These, together with its rich blood and lymph supply, determine the incidence and nature of an infection. Certain organisms attack only the epididymis, others only the testicle, while still others attack both organs. The theories of their transmission to the testicle by way of vas, lymph, and blood stream are discussed.

**MacGowan, G.: Conservative Surgery of the Testicle.** *Surg., Gynec. & Obst.*, 1914, xviii, 329.

By Surg., Gynec. & Obst.

Careless and wanton destruction of the essential genital organs in men and women has been very frequent in the past and remains unnecessarily frequent now, rarer in men because males are more reluctant to submit to castration, but inspired by fear they will consent to mutilation.

The exercise of patience and skill in diagnosis, surgical ingenuity, and anatomical knowledge would save many testicles.

Indurated and painless growth without traumatism should arouse suspicions of lues; a history of infection not always to be elicited—possibly late hereditary without the presence of the usual stigmata. If clearly syphilitic, and resolution under salvarsan or mercury does not occur, exploration for thick-walled hydroceles of the tunica or cord, their removal and the release of pressure caused by adhesions may be followed by speedy cure. MacGowan reports three cases of this character.

He concludes:

Conservative surgery is usually applicable to tuberculous testicles—tuberculosis is the infective disease that most frequently gets well. Protest should be made against castration in all but malignant cases of this disease or where the testicle is plainly the initial and only focus of infection. In tuberculosis of the testicle which commonly commences in the epididymis, epididymectomy is a conservative operation. A case is reported of double epididymectomy in which the power of copulation is preserved intact after five years. Resection of a tuberculous testicle may be successfully accomplished. A case is reported where sexual power was retained after removal of one testicle, both epididymii, and half of the remaining testicle.

Conservative surgery as applied to traumatic destruction of a part of a testicle is discussed, and a case is reported of the successful resection of more than one-half such an organ.

**Knight, C. P.: Epididymotomy, with Report of Cases.** *Am. J. Urol.*, 1914, x, 138.

By Surg., Gynec. & Obst.

The author reports five operations for epididymitis. He used the Eckels' technique with slight modifications. Where Eckels used a blunt probe or grooved director for puncturing, Knight employed a blunt pointed needle, making from ten to twelve punctures. Eckels states that the preparation of the patient is the same as that for a general anæsthetic, as local anæsthesia is not advisable. The writer has used local anæsthesia for this operation in several of the cases which he reports, with absolute success, hearing no complaints of pain and noting no symptoms of shock. He admits there may be some pain if an orchitis is present, as happened in one of his cases, but with careful handling of the testicle, this symptom can be obviated. His conclusions are:

1. There is immediate abatement of all symptoms for which the patient seeks relief.

2. The tendency to relapse is nil.

3. The operative procedure is without danger as regards anæsthesia, because the general anæsthetics can be eliminated.

4. This operation as compared with the older methods of treatment is one of utmost importance from an economic point of view, not only to the patient, when loss of time from daily labor is considered, but also to the hospital in its economic administration, by greatly diminishing the number of days of treatment.

H. A. MOORE.



**Wade, H.: Prostatism.** *Ann. Surg.*, Phila., 1914, lix, 321.  
By Surg., Gynec. & Obst.

This article is long, well written, splendidly illustrated, and has a good bibliography. It goes minutely into a written and illustrated description of the normal and pathological anatomy of the prostate, bladder, and adjacent organs.

In discussing the pathology of simple hypertrophy the author expresses his belief that this may be due to some alteration in a normal internal secretion, and also states that this hypertrophy practically always involves the middle lobe. He further remarks that by the nature of the growth the ejaculatory ducts together with the seminal vesicles are displaced downwards and backwards into a region of safety, thereby favoring the ease with which a suprapubic operation can be done. As the overgrowth does not affect the posterior lobe this is compressed in such a way as to form a sort of false capsule to the prostate and the line of cleavage between it and the hypertrophied tissue is well marked.

Prostatic fibrosis is dwelt upon at some length. In this condition the interglandular tissue is so increased in amount that the whole organ is more or less sclerotic, a process which Wade compares to that of the kidney and other organs. This overgrowth of connective tissue leaves no false capsule, and the union between prostatic capsule and sheath being much more intimate than normal, the removal of the organ by any method is rendered exceedingly difficult. When the middle lobe is especially involved the fibrous sclerotic bar is produced.

Carcinoma occurred in one out of ten of Wade's cases; of these, 6 showed a chronic lobular prostatitis as well. Three types of carcinoma were found: the scirrhous, medullary, and adenocarcinomatous. Wade says that cancer may begin in the center of an area of chronic lobular prostatitis so that complete sections of the whole organ may have to be made before it is discovered.

He discusses the duration of life and the cause of death in unoperated cases of prostatism, laying special stress on the effects of this lesion upon the whole urinary tract. In his discussion of the mortality he quotes freely from figures of others and says that the figures of the world show no general reduction in the mortality. He thinks the cause of death is largely due to septic absorption arising from the operation wound, and substantiates this by a statement that microscopic examination of the prostatic bed in 8 fatal cases showed it to be the site of an acute suppurative process.

The various operative routes and their advantages are dwelt upon. Some of his conclusions are:

1. Three varieties of the disease lead to prostatism: (a) hypertrophy or chronic lobular prostatitis; (b) fibrosis or chronic interstitial prostatitis; (c) carcinoma. He found hypertrophy present in 82 per cent of the 134 cases examined.

2. The operation of suprapubic prostatectomy by blind enucleation is unsuitable in cases of pros-

tatism due to other causes than advanced chronic lobular prostatitis.

3. The suprapubic transverse vesical method of prostatectomy by visual dissection offers the prospect of developing into a means of treating prostatism which will ultimately warrant its adoption in a large number of cases.

4. Prostatic carcinoma in an early case may be clinically indistinguishable from hypertrophy due to chronic lobular prostatitis.

J. D. BARNEY.

**Beer, E.: Adenoma of the Prostate.** *Med. Rec.*, 1914, lxxxv, 471.  
By Surg., Gynec. & Obst.

The author reports 85 cases from the genito-urinary service of Mt. Sinai Hospital. Sixty were operated by the suprapubic route; 10 refused operation; 11 were too bad risks for prostatectomy; and 4 had such slight symptoms that a prostatectomy did not seem advisable.

The writer believes the growths to arise from the much discussed middle lobe in the region between the ejaculatory ducts. He discusses in detail the mechanism of obstruction, showing that obstruction is due to a shutting off of the urethra by the prostate at the time of bladder contraction, but that the urethra is patent when the bladder is not contracted.

The author names the following as indications for operation: (1) Attacks of retention; (2) marked frequency of urination; (3) bleeding; (4) difficult and painful urination; (5) chronic intractable cystitis.

The author believes in a very careful preliminary study of prostatic cases. He lays stress upon three things: (1) The anatomical and functional condition of the bladder; (2) the condition of the heart, and (3) the condition of the arteries.

He thinks that the functional tests should be used, and emphasizes the following dictum:

"It can be said with absolute truth that the nearer a patient comes to a condition in which his excretion of these various substances is zero, provided his supravescical disturbance is symmetrical, the greater the risk of any operative procedure; and those with zero excretion should not be operated upon until they have been treated preliminarily and their kidneys given a chance to improve."

He does not believe that the urea excretion is of any great value in determining the functional activity of the kidneys.

The author describes the one- and two-stage operations. He believes in closing the bladder tightly around the tube, when possible, to prevent any leakage. He lays special stress on protecting the prevesical region of the bladder and endeavors to keep the patient dry by draining through the tube.

Of the 60 cases operated on in this series, 36 were done in the one-stage operation; of these, 2 died. Twenty-four were done in two stages; of these, 3 died, making a total of 5 and 12 per cent mortality respectively—the total mortality being 8 per cent.



He packs a long gauze pack into the bleeding region from which the prostate is taken, with a heavy silk thread attached to the gauze pack and passed through the tube. For an anæsthetic the writer prefers ether preceded by gas.

Of his 5 cases, the first died from kidney infection; the second had a fatty heart; the third had an apoplectic stroke; the fourth died twelve days after an operation for embolism; the fifth patient died from a "blood crisis" in advanced myelogenous leukæmia.

Strychnine and caffeine are used as stimulants in the post-operative treatment. Saline is used per rectum. If much oozing is present the clots are washed out by a catheter introduced through a drainage tube. The packing is withdrawn in three or four days through a Kelly endoscope. Whenever drainage is not well controlled a receptacle of hard rubber is glued over the drainage hole to collect the urine.

These cases are irrigated each day through the urethra with a urethral tip, and the urine is kept acid with urotropin. Closing of the fistula is usually easy and rapid.

The author lays stress on careful asepsis and prevention of infection. He says the end-results of these operations are ideal. A. C. STOKES.

**Deaver, J. B.: Suprapubic Versus Perineal Prostatectomy.** *Ann. Surg.*, Phila., 1914, lix, 360.  
By Surg., Gynec. & Obst.

The author summarizes his article, which embodies the results of his personal experience with prostatectomy, with the following arguments in favor of the suprapubic route:

1. The approach to the prostate is simple and practically bloodless.
2. The enucleation of adenomatous growths is accomplished with ease.
3. The working field is large and under perfect control.
4. The prostate is accessible and can be made more so by digital pressure on its rectal surface and without the danger of injury to the bladder from the use of tractors necessary in the perineal operation.
5. The muscular control of the bladder is not disturbed, since the internal sphincter may be avoided and the compressor urethra lies outside the line of cleavage. Incontinence is therefore less frequent following this technique.
6. Permanent fistulæ are less frequent after the suprapubic operation. They never occur, in fact, if the urethra is bougied.
7. Stones can be more easily removed.
8. Sexual potency is maintained as frequently after the suprapubic operation as after the perineal, and the question of sterility is rarely of any consequence.
9. The mortality is, in properly selected cases, no greater, and the percentage of uncomplicated cures is larger.

In his preference for the suprapubic operation Deaver yields: (1) in cases of carcinoma when lines of cleavage have been obliterated; (2) in tuberculosis of the prostate; (3) In the small sclerotic prostates of chronic prostatitis or fibrous hypertrophy. He states that he operates rarely in these groups of cases, and then only on the strongest indications, using the perineal technique of Young.

H. L. SANFORD.

**Grinenko, A. P.: Total Removal of the Prostate in the So-Called Hypertrophy of That Gland** (Zur Frage der totalen Entfernung der Prostata bei der so-genannten Hypertrophie derselben). *Arch. f. klin. Chir.*, 1914, ciii, 559.

By Journal de Chirurgie.

The author made a minute microscopical examination of 12 hypertrophied glands from cadavers and of 20 obtained by operation. Based on his observations he discusses the total removal of the gland and comes to the following conclusions:

1. The gland has no true capsule which separates it from the surrounding tissue.
2. By its capsule is understood the covering which is formed around it by the folds of the pelvic fascia.
3. A division of the prostate into lobes is unjustified from the anatomical standpoint.
4. The glandular tissue of the prostate is divided by the internal smooth sphincter into the central group of the periurethral glands and the peripheral group of the true glandular tissue of the prostate.
5. The musculature of the gland forms a continuation of the musculature of the prostatic part of the urethra.
6. The gland is very intimately connected with the surrounding tissue by its musculature.
7. In the so-called hypertrophy of the prostate, adenomatous nodules develop in the smooth sphincter from the periurethral glands.
8. These adenomatous nodules are closely connected with the urethra and are arranged around it, in front of the ejaculatory ducts and above the colliculus seminalis.
9. The entire mass of these nodules, which are covered with a kind of fibromuscular capsule, can be enucleated from the gland through the bladder.
10. This nodular mass projecting into the bladder gives the impression of an adenoma from its clearly defined boundaries and relative independence.
11. In transvesical prostatectomy the periurethral adenoma is removed, the prostate itself remaining in place.
12. In this operation a part of the prostatic urethra is removed with the tumor, while the ejaculatory ducts as a rule remain intact.
13. Histologically, the complete removal of the prostate without injuring the covering of fascia is impossible.
14. The transvesical method of removing the tumor from the gland must be regarded as the only rational one.

GLASS.



# SURGERY OF THE NOSE, THROAT, AND MOUTH

## NOSE

**Pfingst, A. O.:** A Case of Complete Bilateral Bony Occlusion of Both Nasal Choanæ. *Laryngoscope*, 1914, xxiv, 179.

By Surg., Gynec. & Obst.

The author reports a case of a telephone operator, aged 24, who complained of inability to breathe through the nose; undeveloped sense of smell; hearing normal and good general health until within two years, since which time she has suffered with daily, dull, frontal headache. Upon removal of considerable mucus from the nose by suction he found a hypertrophic rhinitis; the septum slightly deflected to the right and a probe passed through either meatus met a hard, firm obstruction far back.

The post-rhinoscopic examination revealed a septum slightly convex, appearing to have a general direction downward and forward, completely closing the lumina of both choanæ. The margins of the choanæ were well defined and the vomer projected slightly beyond the septæ in the median line. To the finger the septum gave the impression of being bony. After cocaineizing the septi the author removed a button of bone from the right side, with a hand trephine, but on account of pain the patient refused further operation and passed from observation the next day.

Eight years later the patient reported that since the operation she had been able to blow through the right nostril.

Atresia of the choanæ is mostly congenital; bilateral or unilateral; osseous, membranous, or both, and is best treated by making several small holes in the septum with the electric drill and punching out the bone between to make a large opening extending to the nasal septum, thus preventing reclosure.

ELLEN J. PATTERSON.

**Dighton, A.:** The Submucous Resection of the Nasal Septum. *Clin. J.*, 1914, xliii, 141.

By Surg., Gynec. & Obst.

The author considers the operation indicated in case of any deflection which causes interference to the natural ventilation and drainage of the nose, nasal sinuses, or ear; but contra-indicated in children under fifteen years of age and in all cases of active syphilis.

In operating, the author considers general anesthesia unjustifiable and the initial incision as the most important step in the operation; this should be made to the plane between the perichondrium and the cartilage.

ELLEN J. PATTERSON.

## THROAT

**Davis, J. L.:** Fixed Sources of All Hæmorrhage from Tonsillectomy and Its Absolute Control. *Laryngoscope*, 1914, xxiv, 161.

By Surg., Gynec. & Obst.

The author states that while numerous arterial branches reach the tissues which enter into the formation of the tonsillar fossa, a single artery enters the fossa at its superior extremity, passes downward between the capsule and the muscular aponeurosis, penetrating the capsule, to reach the tonsil.

Accompanying the artery are two veins, one running upward to join the palatine plexus and one running downward to reach the pharyngeal plexus.

Thus in the average case one artery and two veins are the principal vessels severed and since the venous oozing is of temporary duration there remains but the one artery to be dealt with in the control of hæmorrhage.

The author controls hæmorrhage by retracting the superior margin of anterior pillar, grasping the artery carefully to avoid injuring the wall of the fossa and tying a ligature of No. 1 catgut about the vessel.

ELLEN J. PATTERSON.

**Vanderhoof, D. A.:** Technique and Results of Injections of Alcohol for Pain in Tubercular Laryngitis. *Illinois M. J.*, 1914, xxv, 139.

By Surg., Gynec. & Obst.

From his experience in relieving pain in late tuberculous ulcerations, the author advocates early blocking of the nerve in those cases where the ulcerated condition is in that part of the throat innervated by the internal branch of the superior laryngeal nerve.

He uses for the injection a warm 50 per cent solution of alcohol with a record 2 ccm. syringe, the needle of which is filed across and blunted so as to avoid the danger of injuring the superior laryngeal artery which lies in close proximity to the nerve.

The operation is done under aseptic conditions with the patient in the recumbent position. The skin is sterilized with iodine; the nerve located 3 cm. from the incisura thyroidea; then with the skin between the thumb and forefinger the needle is inserted with a slow pushing and twisting movement  $1\frac{1}{2}$  cm. perpendicular to the skin and the point slowly moved about until the patient complains of a sharp pain in the ear or jaw, at which point the alcohol is slowly injected, the needle being moved about so that five minutes is consumed in the injection of the 2 ccm. Upon the withdrawal of the needle, a collodion dressing completes the operation.

ELLEN J. PATTERSON.

**Bérard, L. and Sargnon: Two Cases of Laryngo-pharyngectomy for Cancer** (À propos de deux cas de laryngo-pharyngectomie pour cancer). *Lyon chir.*, 1913, x, No. 6. By Journal de Chirurgie.

The simultaneous removal of the larynx and all or a part of the pharynx is indicated in intrinsic cancer of the larynx which has extended secondarily to the retro-arytenoid region and the pharynx, in extrinsic cancer behind the arytenoids or near the pharyngolaryngeal boundary, and in certain primary cancers of the lower pharynx which have not yet clinically invaded the larynx, but in which extensive operation demands the sacrifice of this organ. Some surgeons (MacLeod, Körte, Glück) have also performed laryngopharyngectomy for tuberculosis, but Bérard and Sargnon think that malignant tumors are the only justification for the operation.

It is generally possible to preserve the posterior wall of the pharynx, in the form of a band of mucous membrane of varying width, the edges of which can be united by flaps of skin buried in the wound. In place of the organs removed a trough of skin and mucous membrane is formed opening forward. The operation may be performed in one stage without a preliminary tracheotomy, or in two stages. In the latter case, a tracheotomy is performed 15 or 20 days before the principal operation. Bérard and Sargnon recommend low transverse tracheotomy, which is a little more difficult to perform than the classical tracheotomy, but which gives no trouble in the later operation and insures a very firm fixation of the trachea, preventing it from retracting and causing mediastinitis. If recurrence does not take place quickly, the pharyngeal trough is closed secondarily by a plastic operation by means of skin-flaps taken from the neighboring regions; this operation is delicate and not always completely successful; fistulæ persist sometimes.

In their cases Bérard and Sargnon used the two-stage operation. In one case they used local anæsthesia with novocaine, in the other the same anæsthetic combined with a very slight general anæsthesia by Billroth's method. In both cases the low transverse tracheotomy was performed under only novocaine anæsthesia. The two patients, who both had extrinsic cancers of the larynx, bore the operation well, but one died of recurrence after four months before the plastic operation could be performed. In the second case the complementary

operation, which was performed two and a half months after the laryngopharyngectomy, was a partial failure and another operation was necessary to make the closure complete.

Laryngopharyngectomy is an operation of considerable gravity, but perhaps not greater than that of simple laryngectomy. Glück and Sorenson published statistics of their own 74 cases with 19 deaths, 25 per cent. In the last 14 operated on they did not lose a single patient. Bérard and Sargnon add a report of 32 cases from different authors, with 6 deaths, 19 per cent, and 7 rapid recurrences.

CH. LENORMANT.

## MOUTH

**Massia, G. and Therre, A.: Peridental Cysts and Tuberculosis** (Kystes paradentaires et tuberculose). *Lyon chir.*, 1914, xi, 68.

By Journal de Chirurgie.

The pathological anatomy of these cysts is well known and it is universally admitted that they originate in the epithelial débris near the apex of the tooth. But the cause of their development is almost entirely unknown; it is generally supposed that the epithelial proliferation is caused by the irritation resulting from dental caries. Massia and Therre's case shows that a specific infection such as tuberculosis may be a factor in the pathogenesis of these cysts.

In a man of 35, who had tubercular lesions of the apices of both lungs and most of whose teeth were carious, these authors found a cyst as large as a small pea at the root of the first upper premolar. The histological examination of this cyst showed typical tubercular follicles with giant-cells; unfortunately, bacteriological proof was not furnished, as bacilli were not found in the sections and inoculation was not practiced. This is not a unique case. Euler published a similar case with the presence of tubercular follicles and Koch's bacilli in the walls of the cyst, and more recently Zilz reported 4 cases of cyst of the root of the tooth with positive inoculation in the cobra. Therefore, tuberculosis must be admitted as an etiological factor in these neoplasms. Generally the infection takes place through a carious tooth, but Massia and Therre admit the possibility of infection through the blood stream.

CH. LENORMANT.



# ABSTRACTS OF SOCIETY PAPERS

## AMERICAN GYNECOLOGICAL SOCIETY

MEETING HELD AT BOSTON, MAY 19-21, 1914

**Henderson, Y.: Recent Experiments Defining the Dangers of Anæsthesia.** *Tr. Am. Gynec. Soc.*, Boston, 1914, May. By Surg., Gynec. & Obst.

The great advances recently made in anæsthesia have replaced vague conceptions with precise knowledge of how fatalities are produced. They are found to be rarely due to excess of anæsthetic, but rather to incomplete anæsthesia.

Thus Lerez has shown that with excess of chloroform, respiration always fails before the heart, but that in lightly chloroformed men and animals, excitement, adrenalin, or sensory stimulation produce delirium cordis.

Under light etherization, the heart is peculiarly susceptible to asphyxia. Partial asphyxiation is not uncommon even with a so-called "open" method. A simple "closed" method, such as the Rovsing mask and bag may keep the patient a better color (a true index of oxygen supply) than an "open" method, because less ether is blown away by stormy breathing, and the patient gets a vapor of adequate strength.

Ether should be used as a gas; i. e., vaporized before being brought to the patient. Boothby has shown that there is really no difference in the amount needed by refractory or "difficult" subjects and others. Experiments by the author show that the ill effects of ether depend largely on the excitement of respiration; that different grades of ether differ markedly in this respect. Ether deteriorates when exposed to light, air, and water, and becomes non-exciting.

Experiments on men and animals show that ether excitement is always followed by subnormal breathing, cyanosis, and partial asphyxia, with deleterious effects on the patient. The natural methods of prevention are to use ether as a gas, to prevent excessive loss of CO<sub>2</sub>, and to administer small amounts of CO<sub>2</sub> as a respiratory stimulant after the anæsthetic is withdrawn.

**Smith, R. R.: The Behavior of the Abdominal Cutaneous Reflexes in Acute Conditions within the Abdomen.** *Tr. Am. Gynec. Soc.*, Boston, 1914, May. By Surg., Gynec. & Obst.

The behavior of this reflex has been noted in 175 cases in which diseased processes existed within the abdomen. The greater part of these were acute. The results have been compared with the findings at operation which followed. This reflex and its

behavior has been a test frequently used by neurologists, and attention has been called to it in local conditions within the abdomen by several writers. The reflex is obtained by stroking the skin of the abdomen, which normally produces an almost simultaneous contraction of the rectus and oblique muscles on the corresponding side. It is common to distinguish four reflexes—two above and two below. The reflex is very constant in healthy young people, though uncertain in very young infants and in old people or those with very relaxed or very obese abdominal walls. In the acute inflammatory diseases within the abdomen it is common to find this reflex involved to a greater or less extent, and the test may be made use of in the diagnosis and in estimating the extent of the lesion.

Smith has found that in 75 cases of acute appendicitis the reflex was more or less involved in 65. It is sometimes involved even where rigidity is absent or uncertain. The reflex was commonly impaired only over the seat of the lesion when circumscribed, though in these and more extensive processes the other reflexes were also frequently weakened or lost. It is commonly, though by no means uniformly, involved in ectopic pregnancy. Its normal presence in cases of bowel obstruction would help to eliminate any acute infectious condition, and in the subacute infections of the pelvis he found the lower reflexes almost uniformly absent. He believes that, although the test has a limited value, it may be of distinct advantage to the surgeon and it is well worth his careful study.

**Gatch, W. D.: The Effect of Laparotomy upon the Circulation.** *Tr. Am. Gynec. Soc.*, Boston, 1914, May. By Surg., Gynec. & Obst.

Operations upon the abdomen are very liable to be followed by disturbances, of a more or less grave character, of the general circulation because of the large amount of blood contained in the abdominal viscera. This is from 35 to 40 per cent of all the blood in the body. The circulation through the abdomen depends primarily upon the action of the heart, though the negative pressure in the thorax and the movements of the abdominal walls may assist the flow somewhat. The pressure in the vena cava inferior is the same as the intra-abdominal pressure. When the latter is increased by ascites or tumors, the pressure in the veins increases to an equal degree. The maintenance of this venous

pressure depends upon the *vis a tergo* of the heart, and when the intra-abdominal pressure becomes higher than the blood-pressure, the circulation through the abdomen ceases. The effect of laparotomy is to increase the hæmorrhage from the wounded intra-abdominal veins, because as long as the pressure in the vein and that in the abdominal cavity remain equal, there is but little tendency for blood to escape from the vein.

Since the intra-abdominal veins are capable of holding several times the total quantity of blood in the body, some means must be employed to prevent their complete filling. The means employed are (1) the vasomotor apparatus, which acts by shutting off the flow of blood into the viscera, and (2) the contraction of the abdominal walls, which maintains an intra-abdominal pressure sufficient to compass the venous and capillary vessels of the viscera. When the intra-abdominal pressure has been reduced to that of the atmosphere, the blood stagnates in the abdomen despite the most vigorous action of the vasomotor apparatus, and death occurs unless the flow of the blood to the heart is assisted by gravity or by other means. Experimental data is cited in proof of the foregoing conclusions.

Recent work has rendered the vasomotor theory of surgical shock no longer tenable. The cause of that form of shock met with under anæsthesia is the accumulation of blood in the abdomen, due either to abolition of tone of the abdominal wall or to evisceration. The latter, together with handling of the viscera, brings about inflammatory changes in the peritoneum by which fluid and cellular elements are withdrawn from the blood-vessels, the general effect being the same as those of hæmorrhage. Experimentally, the dog under ether anæsthesia cannot be reduced to a condition of shock, if the degree of narcosis is not too deep, by traumatization alone, unless the abdomen be opened and the viscera exposed and traumatized. This conception of shock is termed the peripheral theory of shock in contra-distinction to neurogenic theories of the origin of shock. It is supported by the experiments of Carrel with visceral organisms.

**Coe, H. G.: Amenorrhœa of Obscure Origin.**  
*Tr. Am. Gynec. Soc.*, Boston, 1914, May.

By Surg., Gynec. & Obst.

With our increased knowledge of the ductless glands, and especially of the internal secretion of the ovaries, fresh light has been thrown upon amenorrhœa, the explanation of which in textbooks and monographs has hitherto been far from satisfactory. Experiments and clinical observations have established beyond doubt the importance of the corpus luteum, in its relation not only to the physiology and pathology of the endometrium, but to the internal secretion of the ductless glands in which we are especially interested.

Excluding amenorrhœa due to pelvic disease or general systemic affections, there remains a class,

larger than is commonly supposed, in which a thorough physical examination of the patient fails to throw light upon the cause of the condition. The author recently met with three typical cases and has had several under observation during periods varying from one to three years.

The literature of the subject is not extensive. A Paris thesis by Le Lorier is supplemented by a limited bibliography. More recent scientific observations are recorded by such reliable gynecologists as Landau, Fromme and others. All seem to be agreed as to the probable etiology of what has been called "primary amenorrhœa," as distinguished from the condition due to traumatic and inflammatory lesions, three cases of which are reported by the author.

As a rule in the latter unfortunate cases, not only does menstruation cease permanently, but in time the nîsus disappears, referable to secondary atrophy of the ovaries, while the uterus assumes the infantile, or rather pubescent type. It is difficult to explain this phenomenon on the ground of actual ablation of the entire endometrium, since serial sections of uteri removed immediately after curettement have shown that this does not occur. Certainly it is not at all analogous to that which follows cauterization with escharotics, or vapocauterization, where there is actual destruction of the entire lining membrane of the uterus.

The form of amenorrhœa noted in connection with the development of melancholia, dementia præcox, etc., is well known to alienists and gynecologists. Cases of amenorrhœa may be divided into three classes: (1) young girls who have never menstruated; (2) young nulliparæ who, after menstruating more or less regularly, cease entirely; (3) multiparæ, who cease after child-bearing, excluding obvious cases due to super-involution, lactation-atrophy, etc.

In the first class, "infantilism," "hypoplasia," "non-development," (or whatever term we choose to apply to it—genital non-development, or absence and atresia) are excluded by a careful physical examination, so that we have to do with patients, apparently of perfect physical development and without the "stigmata of degeneration." Here we must look carefully for change in the thyroid, or infer the presence of a hypoplasia not discoverable by ordinary methods of examination. More often we shall find that the menstrual nîsus has been present, or the flow more or less regular, but that the latter has become scanty, until finally both nîsus and menses disappear. The writer cited such a case in which, after three years, all treatment had failed to revive even a faint nîsus; neither had marriage nor organotherapy.

Young married nulliparæ, who have ceased to menstruate and consult the gynecologist on account of sterility, are the most familiar class. The author's early experience led him to infer that metabolic disturbances, due to defective internal secretion of the ovaries, often accounts for the amenorrhœa.



In a few instances rapid increase in adiposity has preceded the symptom, and in one case reduction of weight alone, with faradic stimulation of the uterus, was followed by normal menstruation. In general, the menses under this treatment, even when thyroid and corpus luteum extract were continued over a long period, has not been followed by the same satisfactory result, nor has the wished-for conception occurred. Either the nusus alone returned, while the patient was under active treatment, or the flow was scanty and irregular. But the element of increased adiposity as an indication of disturbance of metabolism may be entirely absent.

In the three recent cases, to which allusion was made, all the patients consulted the author on account of sterility. Pelvic examination being negative, so far as throwing any light on the absence of menstruation, corpus luteum extract was ordered in each case, with ergotin and binoxide of manganese at the time when menstruation was supposed to be due, but the author always gives a guarded prognosis with regard to the return of the menses, and a frankly unfavorable one as to the chances of conception. In his opinion it is not only unjust, but positively cruel, to encourage false hopes when Nature herself is silent.

In the third class there is always present the strong probability that the amenorrhœa may be due to some pathological process resulting, directly or indirectly, from parturition. We are all familiar with such cases, so that it is not necessary to discuss them. The history and atrophic condition of the uterus, as well as of the ovaries — so far as this can be determined in the absence of explorative abdominal or vaginal section — point to the probable condition. Coe has met with a few cases, with no increase of adipose, in which the cause was quite as obscure as in the other varieties. In a few, thyroid hypertrophy was noted. Therapy was equally unsatisfactory.

Prognosis is modified by several factors, the probable etiology, the history of the individual case, rapid or gradual development of amenorrhœa, presence or absence of the menstrual nusus, etc. In young girls advice as to matrimony should not be lightly given. Where there is evidence that menstrual activity is merely in abeyance, marriage may stimulate the dormant function, but the prognosis as to conception is always doubtful. The physician should recognize his responsibility in such a condition and should leave no doubt in the minds of the patient and her parents as to the doubtful nature of the experiment, since a grave medicolegal question may be involved. To married women, without symptoms of general disease or local pain, who consult the specialist for sterility, he should be equally guarded in expressing his opinion, although it need not be absolutely unfavorable until therapy has been thoroughly tried.

As regards treatment, curettement is mentioned only to be absolutely condemned. It is the duty of gynecologists to point out to students and prac-

titioners the uselessness and absolute harm of this treatment, from both a pathological and a clinical standpoint. So far as the writer's observation goes, the prognosis in the latter cases is absolutely hopeless. Explorative abdominal section, with or without oöphorectomy or hysterectomy, would naturally not be performed, except under clear indications — pain, history of inflammatory disease, or obvious local trouble demonstrated by examination.

Where there is some encouragement from local treatment, in the shape of an imperfect menstrual nusus or slight bleeding, intra-uterine faradization a few days before the expected period has been followed by positive results. Ergotin and binoxide of manganese have sometimes seemed to favor the uterine contractions, which have been attended with an irregular flow. Ergot is now considered as an uncertain drug in its action upon the non-puerperal uterus, especially in the presence of muscular atrophy. Increase of adipose will, of course, be treated in the usual manner, including thorough trial of some reliable thyroid extract.

Organotherapy undoubtedly offers the best prospect for future treatment, and of the different extracts pituitrin is the most satisfactory, judging by the gratifying results obtained by German observers, especially such a reliable one as Fromme, who administers daily one centigram hypodermatically. No one pretends to explain its exact action, whether as a direct excitant of uterine contractions, a vaso-dilator, or an agent stimulating the internal secretion of the ovaries. At any rate, it should be tried in suitable cases, especially in young girls, otherwise healthy, who have long passed the age when menstruation should occur.

The interesting question of infantilism, and the treatment of children before puberty, opens up a wide field of investigation and scientific experimentation in which the gynecologist of the future will certainly take an active share.

**Polak, J. O.: A Study of the End-Results of Interposition of the Uterus.** *Tr. Am. Gynec. Soc.*, Boston, 1914, May. By Surg., Gynec. & Obst.

Polak states that, in properly selected cases, no operation thus far devised has given as satisfactory results as the interposition or transposition of the uterus for the cure of prolapsus uteri. Eighty-two cases form the basis of this report. In all of these a high pelvic floor repair was done.

The types of prolapse are very important from the standpoint of an operative cure. Decensus always takes place along certain cleavage planes and, according to which plane the prolapse follows in its downward slide, we have the following types:

1. Where the tissues slip their post-pubic attachments and the anterior segment of Hart, with bladder, urethra, and anterior vaginal wall prolapses through the vulva introitus.

2. Where the original injury was through the vesical plate of fascia, allowing a hernial protrusion of the bladder.



3. Where there has been a laceration through the rectovaginal sheet and levator ani muscle, perhaps including the anal fascia, with consequent rectocele or rectal prolapse.

Not only must the type of prolapse be ascertained, but the size of the uterine body, the amount of infravaginal or supravaginal hypertrophy of the cervix, the extent of the vaginal eversion, the degree of cystocele and rectocele, the amount of œdema and the general condition of the vaginal walls, the presence or absence of adhesions, adnexal tumors, the degree of visceral ptosis and intra-abdominal pressure are to be considered. Furthermore, every woman with pelvic prolapse should be examined in the standing posture.

Primarily, the causes of failure have been:

1. Errors in judgment in the selection of cases for this procedure.

2. Errors in technique.

3. Atrophic tissue changes in the reconstructed supporting structures.

4. Unrelieved intra-abdominal pressure acting in conjunction with an abnormally large pelvis, or in a pelvis of faulty inclination.

Admitting that 82 cases is too small a number from which to draw any general deductions, the author offers the following conclusions:

1. Interposition operations should be limited to women at or past the menopause, with relatively small uteri, and that when the procedure is elected in those still menstruating, sterilization by tubal ligation should be done at the time of the operation.

2. Cases of prolapse in which the sliding takes place in the post-pubic cleavage plane are not corrected by the interposition operation.

3. The morbidity is wholly due to technical defects, such as improper preparation, imperfect hæmostasis, bladder injury with its consequent vesical disturbances.

4. In anteverting the uterus, the anterior wall of the uterus should rest on the fascial plate just behind the pubis. The fundus should not be brought under the arch, as excessive anterior displacement not only favors recurrence, but anteflexes the uterus and interferes with drainage.

5. The curettings from uteri about to be transposed should always be examined, as degeneration may occur.

6. Hysterectomy, if subsequently necessary, is easy after this operation.

7. Incidentally, dyspareunia is a constant and troublesome complaint. HARVEY B. MATTHEWS.

**Byford, H. T.: An Internal Alexander Operation.**  
*Tr. Am. Gynec. Soc.*, Boston, 1914, May.

By Surg., Gynec. & Obst.

The author considers the Alexander operation the most satisfactory for replaceable retroversion due to relaxation of the pelvic tissues. If lacerations about the vaginal entrance are present they are also repaired. Operations upon the sacro-uterine ligaments are not advocated in ordinary

cases, because, according to the experience of the author, these ligaments will gradually grow shorter after an Alexander operation if a small-sized pessary is worn for a few months to protect them from overstretching.

When a median abdominal incision has to be made for pelvic conditions the ligaments are shortened through that incision in such a way that they draw toward the internal inguinal rings, as in the Alexander operation, and in such a way that the sutures are extraperitoneal. A fold is taken in each ligament and sutured. These folds are drawn through a peritoneal puncture near the internal ring and attached along the inner surface of the abdominal wall at this point, but extraperitoneally. This is easily accomplished after separating the peritoneum from the abdominal wall on either side as far as the internal ring.

**Stone, I. S.: The Technique of Supravaginal Hysterectomy Since the Introduction of Iodine as a Sterilizing Agent.** *Tr. Am. Gynec. Soc.*, Boston, 1914, May.  
By Surg., Gynec. & Obst.

The literature of this subject has not been profuse since the mortality of hysterectomy reached about 5 per cent in the hands of most operators, and the very low rate of 2 per cent in a few clinics. It is not surprising that a certain amount of trauma and shock should result from the removal of a large tumor which may have been enucleated from the broad ligament and which carries with it the uterus itself. This result of operation is not the only very important consideration. If there be blood or serous collections about the stump, under the bladder, reflexure or peritoneum—a much more frequent occurrence than many suppose—it is very important to avoid even the slightest infection of the wound area, especially in depleted and shocked patients.

After the usual careful study of each case presented for the operation, the method used by the author is substantially as follows: The skin can be sufficiently well sterilized by one application of a diluted tincture of iodine, but the soap and water cleansing the day previous to operation is still used. In one clinic, the benzine iodine solution is used the day previous, but in the other it is omitted, two applications of a 25 per cent dilution, 1 part to 3, of 95 alcohol being relied upon. One of these solutions is made before the patient takes the anæsthetic, the next is applied just as the sheet and towels are placed. The first application is made ten minutes before the second and the latter is made to neutralize any bacteria which may have reached the surface during the excitement stage of anæsthesia. There must indeed be great nicety of technique if an attempt is made to exclude the minute particles of iodine from the wound, which some writers and teachers appear to dread, and it also seems to be equally impossible to say that two scalpels are better and safer than one while making the incision. If the first scalpel used in opening the skin carries



bacteria with it, the second scalpel will surely carry them further.

Although much has been read and heard of the absence of bacteria within the uterine and cervical canal, and that cultures will not show a growth if taken from the vicinity of the internal os, nevertheless all of the bacteriologists say that bacteria are found within the external os, and it would appear to be at least prudent to render the entire uterine canal and also the vagina quite sterile, in order that the operation may be done through a sterile field, whether a total or a subtotal hysterectomy.

The use of iodine within the uterus has many advantages, but in the author's clinic the fluid — 25 per cent of the tincture — is not thrown into the uterus with such force as has been recommended when the tubes are injected, as there may be a disadvantage in an unnecessary use of a toxic agent.

Finally, as one of the essential factors in the prevention of morbidity at this clinic they are using a combination of local with general anaesthesia. Novocaine in 1:400 solution is freely used with ether, or if the patient appears to require it, nitrous oxide-oxygen is used. Before the wound is closed the urea and quinine solution is used above each pedicle and in the cervix itself in order to prevent the after-pain. In addition to this, morphia or heroine is often used to prevent shock or great restlessness.

The result of this technique appears to be nearly perfect if the elimination of morbidity may be said to indicate such a desirable consummation. In charts — exhibited by lantern slides — the author shows a composite temperature range of most of their supravaginal hysterectomies since using iodine in the manner above noted. One special chart shows a case of ether pneumonia which recovered easily. Another, by comparison, shows an infection which occurred in a patient whose cervix could not be reached for injection. The result was a typical infection "under the flap." A third shows nothing except that the patient had a hæmatoma which was not infected.

**Frank, R. T.: The Clinical Manifestations of Diseases of the Glands of Internal Secretion in Gynecological and Obstetrical Patients.**  
*Tr. Am. Gynec. Ass., Boston, 1914, May.*

By Surg., Gynec. & Obst.

The aim of the author is to point out means of standardizing research, both clinical and pathological, by improved diagnosis and careful study of cases.

The glands of internal secretion fall into three groups: (1) thymus, pineal and adrenal cortex may stimulate the sexual tract; (2) hypophysis and thyroid eventually cause hypoplasia; (3) the pancreas and parathyroids appear to play no rôle.

The gonads, or sex glands, in turn react upon the other ductless glands producing indirectly important changes in growth, nervous system, etc. The gonads govern the growth of the external and inter-

nal genitals directly, and indirectly the development of the secondary sex characters — hair, fat, breasts, pelvis, larynx, psycho, etc.

The human ovary is a compound organ composed of follicle apparatus, corpus luteum, and perhaps the interstitial gland of atretic follicles.

A description of the formation of each of these constituents follows. Ovulation apparently takes place from 1 to 14 days after the onset of the menstrual flow, the best time for impregnation being immediately after menstruation ceases.

Physiologically the follicle apparatus controls the gradual pre-puberty growth of the genitals — perhaps assisted by the interstitial gland. The corpus luteum produces the cyclical changes. In pregnancy the products of conception cause a persistence of the corpus luteum, and the yellow body prevents further ovulation and provides for nidation.

The anatomical changes noted in hyperfunctional and hypofunctional conditions of the genitals are then discussed.

Clinically, only two types appear — the hypofunctional and hyperfunctional. Hypofunction locally is shown by aplastic genitals, amenorrhœa, dysmenorrhœa, and sterility. Systemically, infantilism, eunuchoidism, changes in the secondary sex characters, etc., appear in almost every case. Hyperfunction may cause no local change; symptomatically, menorrhagia or metrorrhagia, and sometimes overfertility, accompany this change. Systemically the changes are not marked.

The diagnosis must include not only the local condition, with examination of mucosa, uterus, and ovaries when removed, but also a functional examination of the thyroid, hypophysis, adrenal, etc. This may require blood examinations, X-ray, tests of sugar and adrenalin tolerance, effect of atropine and pilocarpine, etc., before, during, and after treatment.

In treatment organotherapy has proved disappointing. Ovotherapy may be useful for the vasomotor symptoms resulting from castration. Thyroid at times helps in the amenorrhœa of obesity; in early vomiting of pregnancy it is of great value. Hypophysis extract has been little tried; the pituitrin effect is purely a drug one.

X-ray is of value in functional hæmorrhages of puberty; adult and preclimacteric type, if malignant changes can be excluded. Resection of the ovaries for dysmenorrhœa, sterility, or irregular bleedings is justified only if the abdomen is opened for a more serious cause. Transplantation of the ovary fails to give permanent results. Local uterine treatment is of little value. Systemic hygienic measures are still the best at our disposal.

**Gellhorn, G.: Spinal Anæsthesia in Gynecology.**  
*Tr. Am. Gynec. Soc., Boston, 1914, May.*

By Surg., Gynec. & Obst.

The severity of an operation stands in direct proportion to the amount of ether inhaled. The



popular ether drop-method is not as safe a procedure as would appear from existing statistics. The latter are incomplete in regard to the number of fatalities and do not take into consideration late complications which may either lead to death or seriously interfere with convalescence. There should not be any one routine method, but the needs of the individual case must govern the choice of the mode of anaesthesia. In gynecological work, spinal anaesthesia offers particular advantages and shows most impressive results.

The mortality rate from spinal anaesthesia cannot be determined by statistics. These, too, are unreliable. The majority of deaths occurred during the experimental stages of the method. The anaesthetic itself seems to have nothing to do with the mortality. Stovaine, tropococaine, and novocaine are more or less equivalent; the author's experience is limited to the last-named drug.

The safety of spinal anaesthesia depends first and foremost upon its accurate technique, and the strictest observance of even the minutest detail is of paramount importance. Reports of death must, therefore, contain all details of the technique employed before they can be admitted to serious consideration. It has been proven in thousands of cases that by a painstaking technique not only death, but also collapse and other alarming complications of earlier days, can be avoided successfully.

Contrary to the popular belief, there is no psychic trauma connected with spinal anaesthesia. Nausea and vomiting during operation are reduced to a minimum or are altogether absent. The abdominal walls are fully relaxed, and the intestines remain quietly within the peritoneal cavity. Therefore, all operative manipulations are rendered easier, and the brusque handling of the viscera is obviated. All this tends to lessen the operative shock, and as nerve impulses do not reach the brain, spinal anaesthesia is the ideal measure of anoci-association. In a certain small percentage, analgesia is incomplete; then, a few whiffs of ether suffice to render the operation painless.

The author, in a list of 127 abdominal and 42 vaginal operations, shows that all kinds of gynecological operations, including those on the kidney, can be performed under spinal anaesthesia. There has been no death from the method. In all, four patients have died; two of these from sepsis after radical operations for cancer of the cervix.

The post-operative care of "spinal cases" is strikingly easy. The usual post-operative symptoms appear in greatly mitigated form, or are altogether absent. Patients who have had personal experience with ether and spinal anaesthesia declare themselves in favor of the latter. An annoying and comparatively frequent by-effect is headache, which, however, yields spontaneously or to bromides, and constitutes no danger to the patient. Other by-effects such as backache, paresthesia, and temporary paralysis seem to have become less frequent with improvements in technique, and it is the con-

sensus of all observers that lasting ill effects are conspicuously absent. Spinal anaesthesia markedly lessens the blood-pressure and should therefore be used with caution in cases of pronounced hypotension. Acetonuria occurs after spinal anaesthesia as well as after inhalation narcosis but exerts no deleterious effect upon the patient; it disappears spontaneously about five days after operation.

Spinal anaesthesia enables the operation to be carried on with safety on patients in whom ether would be contra-indicated. It is, thus, chiefly applicable in cases where the seriousness of the affection, the magnitude of the operation, or co-existing complications—cardiac and pulmonary lesions, nephritis, diabetes, hyperthyroidism, advanced age, debility—constitute a particular risk. Minor operations should be reserved for ether narcosis. Spinal anaesthesia is contra-indicated in kyphoscoliosis and other marked anomalies of the spinal column, diseases of the central nervous system, profound shock, or marked hypotension from other causes, sepsis, and fevers of unknown origin; furthermore, in neuropathic individuals and where there is a strong prejudice against the method. Suppurations and eruptions near the desired site of injection forbid the use of spinal anaesthesia until aseptic conditions can be established.

**Peterson, R.: A Critical Review of Five Hundred Published and Unpublished Cases of Abdominal Cæsarean Section for Eclampsia.** *Tr. Am. Gynec. Soc.*, Boston, 1914, May.

By Surg., Gynec. & Obst.

Since the 500 cases of abdominal cæsarean section represent the work of 259 operators they are a very fair index to the present status of the operation as a method of treating antepartum eclampsia. Also since the results of operative obstetrics, especially abdominal cæsarean section, are far better at the present time than formerly, the value of the operation as a method of treatment of eclampsia can only be judged by grouping the cases chronologically.

Between 1908 and 1913 there were 283 cases of eclampsia treated by abdominal cæsarean section with 73 deaths, or a maternal mortality of 25.79 per cent. Up to 1908 there were 198 cases with 95 deaths, or a mortality of 47.97 per cent. Hence, the maternal mortality in the five-year period has been reduced nearly one-half.

The old figures of a 40 or 50 per cent maternal mortality from abdominal cæsarean section for eclampsia are incorrect and should no longer be quoted.

The mortality percentage quoted above, 25.79, can be considerably lowered by care in technique and avoiding the use of the suprapubic route when there is great probability that the woman has been infected from below.

Nearly one-fifth of the entire series, 91 operations, were performed by thirteen men having five or more cases to their credit, with 17 deaths, or a maternal mortality of 18.68 per cent. Deducting 15 cases



where the proportion of moribund and septic patients was very high, the remaining 76 cases with 10 deaths give a maternal mortality of 13.15 per cent.

Although an eclamptic may die after a single or survive after many convulsions, the latter must be utilized as an indication of the degree of eclamptic poisoning until a better method has been found of estimating the patient's condition.

Emptying of the uterus, either spontaneously or by artificial means, while it puts a stop to the further elaboration of toxins from the foetus, the placenta, or both, may not be sufficient to prevent further convulsions or in certain cases death of the mother from intoxication. In other words, so great has been the effect of the poison that convulsions continue after delivery, or death ensues in spite of the relief afforded by emptying the uterus.

In the present series, convulsions ceased after abdominal caesarean section in 251 out of 457 cases, or in 54.92 per cent. These statistics agree with those made up from those obtained from thousands of cases of eclampsia showing that convulsions cease after the emptying of the uterus, either spontaneously or artificially, in from 52 to 62 per cent of the cases.

Even when the convulsions cease after delivery, a certain proportion of the patients die. In 146 cases where the convulsions ceased after abdominal caesarean section during the five-year period (1908-1913) there were 41 deaths, or a maternal mortality of 19.8 per cent.

While the above percentage of patients died after emptying the uterus by abdominal caesarean section after cessation of the convulsions, the mortality is much less than where the convulsions continue, since in 130 of such cases there were 41 deaths, or a maternal mortality of 31.53 per cent.

The operative treatment of eclampsia has never been given a fair trial. For this the uterus should be emptied quickly, as soon as possible after the onset of the first convulsion, not emptied after all kinds of medicinal treatment have been tried and failed.

In the present series there were 25 deaths after 124 operations performed after one to five convulsions, or a maternal mortality of 20.32 per cent.

The best results in the operative treatment of eclampsia are bound to follow immediate emptying of the uterus in cases where the woman has not been infected by frequent vaginal examinations or attempts at delivery from below. This is shown by the following:

In 60 of the 124 cases where the operations were performed after from one to five convulsions, where none or only one or two vaginal examinations had been made and where no attempts were made to deliver from below, there were only 9 deaths, or a maternal mortality of 15 per cent.

The increase in mortality due to delay is shown by a mortality of 30.33 per cent where the operations were performed after the sixth convulsion. This is 10 per cent higher than after quick delivery and five

per cent higher than the total mortality resulting during this same period (1908-1913).

In 60 cases where the convulsions ceased after operations performed after from one to five convulsions there were 8 deaths or a maternal mortality of 13.33 per cent. The mortality is twice as high, 26.92 per cent, after operations performed under the same conditions except that the convulsions continued.

When the abdominal caesarean sections were performed after more than five convulsions, there was a resulting mortality of 26.31 per cent, where there was cessation of the convulsions, and 36.36 per cent where they continued.

The average number of convulsions in 386 cases of eclampsia in the abdominal caesarean series was 9 where the cases were not grouped. The average was 10 up to 1908 and 8 from 1908-1913.

Twins occurred 21 times in 500 cases of abdominal caesarean section for eclampsia, or in 4.02 per cent of the cases. This is over three times as frequent as are twins in normal cases.

Excluding premature children and counting all children as living who survived one hour after delivery, there were 9 deaths from 1908 to 1913, where 248 children were delivered by abdominal caesarean section, or a foetal mortality of 3.62 per cent. Under the same conditions the foetal mortality was 10.69 per cent if children dying the first three days after delivery were counted among the deaths. Even estimating the foetal mortality by this method, it is much better than by any other method of treating eclampsia.

The foetus as well as the mother is affected by the eclamptic poison. The greater the number of the eclamptic convulsions before the delivery the greater the foetal mortality. Hence, for the sake of the foetus, the uterus should be emptied as soon as possible after the first convulsion. If other factors in the case call for abdominal caesarean section, the chances of the foetus will be much better than if another method of delivery be employed.

In 474 cases of eclampsia in the present series 83.75 per cent were primiparae and 16.17 per cent multiparae. The relatively larger proportion of primiparae was due to the fact that primiparous conditions, such as undilated and rigid cervix and rigidity of the soft parts, more often called for the abdominal operation than for other methods of delivery.

The maternal mortality is higher after abdominal caesarean section in multiparous women than is the case with primiparous eclamptics. In the present series in 225 primiparae the maternal mortality was 24.44 per cent, while in 48 multiparae the mortality was 27.08 per cent.

The foetal as well as the maternal mortality is higher in multiparae after abdominal caesarean section. This is probably due to the greater degree of intoxication among the multiparae, since in both primiparae and multiparae the children, because of the nature of the operation employed, escape the

traumatism of labor. The greater intoxication among the multiparæ is probably due to their being on the average older than the primiparæ, the average of the former in 77 cases being 32.6 years while the average age of the latter in 397 cases was 24.6 years.

The maternal mortality in eclampsia after abdominal cæsarean section steadily increases with the age of the patients, it being 23.63 per cent between the ages of 16 and 20 and 31.11 per cent between the ages of 31 and 35.

The number of eclamptic cases in the present series steadily increased from the fifth month of gestation up to full term; also the farther advanced the pregnancy, the lower the maternal mortality.

Unless the aseptic technique employed in attempts to deliver from below be known, abdominal cæsarean section is contra-indicated, so great are the dangers of fatal peritonitis when the patient is infected.

The high death rate of abdominal cæsarean section after operative procedures is shown by the fact that there were 10 deaths in 29 such cases, or a maternal mortality of 34.48 per cent. This 9 per cent increase in mortality over the total mortality, 25.79 per cent, during the same period was undoubtedly due to sepsis, shock, and delay in emptying the uterus.

The mortality is distinctly higher after abdominal cæsarean section in eclampsia if vaginal examina-

tions have been made prior to the operations. The danger increases directly with the number of examinations made and the lack of asepsis employed.

Any obstetric condition which makes delivery by the natural passages prolonged and difficult may be an indication for abdominal cæsarean section in eclampsia. If delivery be decided upon, the uterus should be emptied by the method which will perform the work the quickest and with the least trauma and shock to mother and child. However, it must be borne in mind that there is more danger of sepsis when the peritoneal cavity is opened.

With the present state of our knowledge of this operation for eclampsia it cannot be denied that older and more tried methods of emptying the uterus in eclampsia give better results in eclamptics with normal pelvis and soft parts, hence should not be lightly discarded in favor of the more brilliant and more easily performed abdominal operation.

But with a maternal mortality after abdominal cæsarean section of 18.68 per cent in 191 cases of eclampsia in one series, 13.13 per cent in 76 cases in another, and 15 per cent in 60 cases where the uterus was emptied after a few convulsions, the operation under consideration has reached a stage where it can no longer be disregarded by obstetricians, who have based their opposition to the procedure upon statistics which were altogether too high.

## AMERICAN ASSN. GENITO-URINARY SURGEONS

MEETING HELD AT STOCKBRIDGE, MAY 15-16, 1914

**Keyes, E. L. and Mohan, H.:** *The Pathogenesis of Renal Lesions from Pyelography.* *Tr. Am. Ass. G. U. Surgeons*, Stockbridge, 1914, May.

By Surg., Gynec. & Obst.

Keyes and Mohan have compared the lesions found in kidneys whose parenchyma shows infiltration as a result of pyelography with the same lesion experimentally produced upon dogs. They conclude:

1. Momentary distention of the normal kidney pelvis doubtless causes no more damage than a congestion of the organ, which congestion is doubtless of brief duration.

2. But if the pressure is kept up there is, as Zachrisson suggested, an absorption of the injected fluid into the blood-vessels and lymph-spaces about the kidney pelvis.

3. Although, like Zachrisson, the authors have been unable to detect any collargol forced into the collecting tubules, nevertheless they have found collargol in the glomeruli and in the convoluted tubules.

4. But inasmuch as there was much less collargol within the glomeruli and tubules than in the lymph-

spaces and vessels, they conclude the appearance of the collargol within the glomeruli and tubules is a secretory phenomenon.

5. In actual practice, however, a secondary infiltration due to renal retention following the examination must be considered.

6. This secondary distention is of far greater importance than the primary retention at the time of injection.

7. Secondary retention is the cause of the deaths that have been reported from pyelography.

8. It is probable that the mechanism of infiltration in these cases is the same as that of primary retention in normal kidneys.

9. Alarming symptoms following pyelography are to be relieved by immediate drainage of the kidney or by nephrectomy.

**Caulk, J. R.:** *Incrusted Cystitis.* *Tr. Am. Ass. G. U. Surgeons*, Stockbridge, 1914, May.

By Surg., Gynec. & Obst.

The author reports an interesting case of a recurrent incrustrated cystitis occurring in alkaline urine, in a patient who had been operated on both supra-



pubically and transurethrally many times and proposes a simple treatment of injection of Bulgarian bacilli directly into the bladder in such cases.

The patient was a young woman, who since the birth of her last child, four years previous, had had a terrific cystitis with a constant profuse hæmaturia, accompanied by the passage of many bits of calcareous material. She suffered for several years an increased frequency of urination, amounting to every fifteen minutes day and night. There was also great pain on urination, considerable loss of weight, and marked anæmia. She had had an operation two years before, supposedly for tumor of the bladder, done by a surgeon in a small town, but was not relieved by the operation.

The patient appeared at the Washington University Hospital, May, 1913, suffering from the symptoms described above. Her general examination was negative, except for the anæmia and loss of weight; heart and lungs negative; abdominal examination negative; urine bloody and alkaline. Cystoscopic examination showed the bladder capacity to be 150 ccm. The cystoscope showed a general intense acute cystitis. Over the trigone and bladder base were seven irregular projections, covered with a silvery white deposit, with irregular surfaces which were downy. They were fixed to the bladder wall and only the superficial downy part could be moved about. Around the base of the tumor was an intense hyperæmia with bleeding spots. There was an annular band of the incrustated material around the internal orifice of the bladder; neither ureteral orifice was visible. The urine was negative for tubercle bacilli.

It was thought that the disease was "incrustated bladder tumor." Repeated local treatments with many high-frequency sparks produced no improvement. A specimen of the tumor-like mass, removed with an operating cystoscope and examined pathologically, showed it to be composed of two zones: an upper zone of necrotic tissue, in which were imbedded masses of calcareous material; beneath this was a zone of granulation tissue. The squamous epithelium of the bladder persisted in places and there were several villous-like masses present. The diagnosis was chronic ulcerative cystitis with calcareous deposits.

Suprapubic cystotomy was performed. The bladder was thoroughly curetted and the tumors excised with knife and scissors, and the whole interior of the bladder treated with high-frequency sparks. The opening was closed, catheter drainage being done through the urethra. Within two weeks the cystoscope showed the identical picture as before: A recurrence of the tumor-like masses and incrustations. The patient was then curetted through the urethra many times, and a few days after each curettage, the same picture had recurred. Examination of the material showed it to be composed of calcium phosphate, triple phosphates, and ammonium urate. Urine was highly alkaline with a proteus infection. A treatment was given of

boric acid irrigations, acid sodium phosphate, and urotropine in large doses. The attempt was then made to change the chemical reaction of the urine by putting acid directly into the bladder. It was thought that acids themselves gave no effect on account of the frequent evacuations of the bladder. The author then injected Bulgarian bacilli with the hope of having some remain in the bladder between the urinary acts, to grow, and to kill off the original inhabitants. This was very quickly accomplished. Within forty-eight hours the patient showed improvement. She was given daily injections of three tablets containing six thousand bacteria each, every other day for ten days. Within forty-eight hours she began to pass off large quantities of this calcareous material.

Six days after the institution of the treatment, cystoscopic examination showed instead of the incrustation and tumor masses, multiple ulcers. At this time the ureteral orifices could be easily seen and catheterized; there was no renal infection. Ten days after the first treatment, the patient's urine was highly acid but cloudy, and she was able to sleep five hours at night. At this time one bichloride irrigation was sufficient to kill off the Bulgarian growth and the urine became clear, still remaining acid, and has continued so up to the present time, over two months since the first treatment. There is at present no vestige of previous trouble within the bladder. The urine is clear and sparkling. The patient has gained a great deal in weight and is having absolutely no urinary distress.

The author takes up various phases of incrustated alkaline cystitis, giving the various theories, arriving at no definite conclusions as to the pathogenesis, but remarks that the combination of infection, necrosis, and supersaturation seem the most important factors. He gives a description of the two main types of incrustated cystitis, namely, the flat and the tumor-like, showing that the lesion is most commonly located on the trigone and internal orifice, associated with a general acute cystitis with marked hæmorrhage. The most distinguishing pathological characteristic is its marked tendency to recur. He states that there is nothing important in the symptomatology except that the symptoms exemplify an intense cystitis and are characterized by the passage of stony material.

The important diagnostic points are that the tumor masses do not show villi; that the downy material which covers them is quite superficial, ureter catheters being able to lift up only small whitish leaflets. Removal with an operative cystoscope gives the most accurate means for diagnosis, showing the intense inflammatory process with infiltration of salts. Another diagnostic point is the intense œdema extending along the urethra and at the meatus. The most important diagnostic point is what Caulk calls a therapeutic test, which consists in acidifying the urine, causing rapid evacuation of the tumor masses, demonstrating the remaining ulcers, quieting down the cystitis so that



a more thorough inspection of the bladder is possible, and permitting ureter catheterization in order to examine the upper tract.

The author's aim is to call the attention of the profession to the treatment, which he recommends. He takes up the discussion of the usual treatments which have been employed, such as the palliative, consisting of irrigations, instillations, and internal medications, which have produced no lasting effects or curative results; and the surgical: suprapubic, endo-vesical, and in rare instances, vesico-vaginal. In all of these operations there has been either thorough curettage, or excision, with or without drainage.

Curettage through the urethra has been the most commonly accepted method, but the one which seems to offer the best results has been suprapubic excision of the tumor masses with closure of the mucous membrane. In the author's case all of these methods were employed, with the exception of the suture of the mucous membrane after excision, and all of these methods were promptly followed by a complete recurrence within forty-eight hours. After injection of the Bulgarian bacilli into the bladder, the patient was greatly improved, and within three weeks entirely well, and has been free from trouble since.

The author realizes that the profession has looked upon this treatment with skepticism, but hopes that in such cases it will be given a chance. It is a problem of a bacterial battle in which one species of bacteria outgrew the other and in this case the lactic acid bacilli overwhelmed the proteus.

The paper is concluded by a few experiments which attempt to show the harmlessness of the Bulgarian bacilli to the bladder mucous membrane. The bladders of several animals were injected with these bacilli and in no case was there any inflammatory change in the bladder mucous membrane, even after it had been traumatized.

**Barney, J. D.: Observations on the Seminal Vesicles.** *Tr. Am. Ass. G. U. Surgeons*, Stockbridge, 1914, May. By Surg., Gynec. & Obst.

The author briefly reviews the work done by others along experimental and clinical lines which has thrown light upon the physiology and histology of the seminal vesicle. He then describes some of his own work on the seminal vesicle.

The presence of elastic tissue has been shown in normal and pathological specimens. Normally, it is relatively large in amount, situated almost wholly in the subepithelial tissues with fairly constant prolongations into the villi of the gland cavities, and in certain normal cases has been seen in minute quantities scattered irregularly through the muscular walls. In disease this elastic tissue seems to be generally decreased in amount and irregular in its distribution.

A careful study of the connective tissue of the seminal vesicle shows it to be present not only in health but also in disease. In infants it is relatively

scanty, its location corresponding pretty closely with the elastic fibers. In the normal adult vesicle its presence is well marked.

Infection of the seminal vesicle seems to result invariably in the deposit of very large amounts of connective tissue which not only produces atrophy of the muscular bundles, but by its contraction distorts, obliterates, or distends the glandular cavity. Dissection of numerous specimens shows that this fibrous tissue not only lies within but outside of the seminal vesicles so that they are embedded in a dense cake of plastic exudate. It is this which makes their palpation by rectal examination difficult in certain cases, and their excision sometimes almost impossible.

The author has further demonstrated the presence of large numbers of sympathetic nerve-fibers in the perivesicular tissues, an observation which does not seem to have been made by others.

Bacteriological investigations have thus far shown the contents of the seminal vesicle to be sterile, which is contrary to the findings of others. On the other hand, a careful investigation in one case of the bacterial contents of the wall of the seminal vesicle has shown it to contain bacteria, an observation which corresponds with the work of Rosenow on the stomach and appendix.

In a case in which orchidectomy had been performed some years previously the seminal vesicle on that side was found to have disappeared entirely, an observation which agrees with that of other writers. On the other hand, in a case of undescended testicle the corresponding seminal vesicle was found to be normal in size and in the same condition of disease as its fellow.

A search for the *spirochæta pallida* in two autopsy specimens of infants dying of congenital syphilis has failed thus far to find the organism. The author has done a considerable amount of work in injection of the seminal vesicle with collargol, both in the living and the dead. Radiograms of these injected organs show in normal cases the contour of the glandular cavity very distinctly. In addition to this the X-ray has revealed the presence, not only in the seminal vesicle, but in the ampulla of the vas, of numerous and complicated diverticula. In pathological specimens the radiogram has shown a marked change in appearance from the normal; the dilated cavities overlapping one another have made a picture which cannot be mistaken, and the contrast is so striking that the author believes that by this method of injection the diagnosis in doubtful cases can be made clear.

It is the author's belief, not confirmed as yet, that in cases of vesiculitis the prostate is quite as extensively involved, a fact which would explain, in part, some of the poor results of operations for drainage or excision of the seminal vesicle alone. The operated cases thus far have shown in almost every instance, not an uninterrupted convalescence, but exacerbation or fresh infections of joints hitherto quiescent.



**Pedersen, J.:** An Unusual Case of Prostatic Carcinoma, Originating Apparently in the Subcervical Glands. *Tr. Am. Ass. G. U. Surgeons*, Stockbridge, 1914, May. By Surg., Gynec. & Obst.

A forty-seven-year-old man of good physique suddenly developed hæmaturia and frequency of urination. Cystoscopy showed a large mass overlying the trigone. Transperitoneal cystotomy (October 30, 1913) thoroughly exposed the mass. It was found to consist of two almost symmetrical halves, their inner surfaces in contact, the respective pedicles springing from points proximal to the internal sphincter. The two masses and those portions of the prostate from which they sprung were removed. Convalescence was uneventful. Bladder function was restored to practically normal. It so remains, though there are evidences of intra-abdominal metastasis. The pathological examination proved the growth to be carcinoma.

**Gibson, C. L.:** The Advantages of a Low Table and Other Points in the Technique of Suprapubic Prostatectomy. *Tr. Am. Ass. G. U. Surgeons*, Stockbridge, 1914, May. By Surg., Gynec. & Obst.

The low-table position means that the patient lies flat on his back on a table so low that the operator has actually to lean over when enucleating the prostate, there being no flexion at the elbow-joint. By this maneuver a part of the operator's weight is actually used to depress the abdominal wall and allows the full use of the entire force of the fingers in enucleating the prostate. This position is of particular advantage in using gas-oxygen anaesthesia as it makes it quite feasible to operate with imperfect relaxation of the abdominal wall. The operation can be performed very readily under these conditions, ten minutes or less in favorable cases.

It is of great importance to provide for free drainage and prevent the formation of clots. The drainage is best performed by using a short tube, rubber or the special tube of Kenyon, with an interior diameter of at least an inch. Then some form of suction apparatus which can be improvised by a simple attachment to a bathtub or other faucet is applied at once as soon as the patient is returned to bed, which should be done with all possible dispatch. The wound is thus kept absolutely dry, no clots form, and there is little opportunity for infection to the space of Retzius. The large tube is removed in three to five days. A small suction catheter is then allowed to rest just within the lips of the bladder wound which will tend to close very rapidly. Meanwhile, the patient is kept perfectly comfortable and dry. With a little management the suction apparatus can be applied when the patient sits up in a chair.

**Chute, A. L.:** Some Things that Influence the Mortality after Prostatectomy. *Tr. Am. Ass. G. U. Surgeons*, Stockbridge, 1914, May. By Surg., Gynec. & Obst.

The author based his conclusions largely on a series of 58 consecutive prostatectomies with but a

single death. He felt that this was an average series of cases and the application of the same methods should give practically the same mortality in other series.

His conclusion was that the danger in prostatectomy lies almost wholly in the renal condition. There are two renal conditions that may endanger the life of the patient who is about to submit to prostatectomy. The first is renal suppuration, pyelonephritis, combined with back pressure due to a residual; the other, and especially dangerous condition, is that where there is a chronically over-distended bladder with a non-infected urine. Many of these patients are in condition where an ill-considered anaesthetic will cause their kidneys to shut down and they die in from two to five days of symptoms easy to attribute to shock, hæmorrhage, or exhaustion. Such deaths are really due to renal insufficiency. He gives his reasons for believing that hæmorrhage plays but a small part in this mortality.

High mortality following prostatectomy is to be avoided: first, by getting kidneys that are not doing their work into a condition where they are acting efficiently; second, by avoiding injury to embarrassed or susceptible kidneys at the time of operation. The first is accomplished by preliminary drainage, either by means of an inlying catheter or a preliminary suprapubic drainage; the second, by substituting local spinal anaesthesia with novocaine for the use of ether. The question of mortality hinges almost wholly upon the functioning of the kidneys. The task of getting them into condition must be accomplished before operation. For the most part, the question of recovery which depends upon the renal function is settled before a patient undergoes the operation.

**Cunningham, Jr., J. H.:** The Operative Treatment of Carcinoma of the Penis. *Tr. Am. Ass. G. U. Surgeons*, Stockbridge, 1914, May.

By Surg., Gynec. & Obst.

The author emphasizes the importance of dealing radically with carcinoma of the penis, and describes the author's method of operation. As a special causal factor in this disease, phimosis is mentioned, and to substantiate this view the rare occurrence of the disease among Jews is cited. Implantation of the disease by contact with a cancerous cervix, malignant degeneration of venereal warts, and the development of the disease on the scar of healed syphilitic chancres is mentioned.

The pathology of the subject is considered. Special reference is made to the location of the metastases, and the lymphatic system of the genitals is described and illustrated. It is stated that metastases occur early,—in the inguinal glands,—are usually bilateral and that the deep group of inguinal nodes occupying the crural canal which often contain metastases are frequently not removed at operation and in consequence it is from these nodes that recurrences become manifest.



It is pointed out that the metastasis in carcinoma of the penis takes place along the lymphatic channels of the penis to the superficial nodes, that these nodes anastomose with the deep inguinal group, and these in turn anastomose with the iliac nodes within the pelvis, by way of the crural canal. It is also shown that the lymphatics of the urethra may carry metastases via a lymphatic channel which passes over the symphysis to the pelvic nodes without communication with the inguinal nodes, when the growth has involved the urethra.

The operative steps are illustrated and the description is as follows:

1. A condom is placed over the penis to prevent implantation of cancer-cells during the operation.

2. A sweeping U-shaped incision is made, beginning slightly above, and to the inner side of, the anterior superior spine on one side downward in the fold of the groin, to the root of the penis, and upward on the other side. This incision, which passes just through the skin, outlines an apron, which is dissected upward.

3. An incision just passing through the skin is made downward over Scarpa's triangle from the center of Poupart's ligament. The skin is dissected inward and outward, making two flaps.

4. Beginning at the top of the abdominal incision, the fat which contains lymphatic channels is dissected in one mass from the abdominal fascia. This dissection is carried downward into Scarpa's triangle on either side. The superficial nodes are removed still imbedded in the fat if possible. Hæmorrhage during the abdominal portion of the dissection is slight, but as it is carried over Poupart's ligament into Scarpa's triangle, the superficial epigastric, the superficial circumflex, and the superficial external pudic vessels must be secured beneath the fat mass as they come through the fascia. If the involvement of these nodes is marked, the growth may extend through the fascia lata to the deep inguinal nodes, as one mass, in which event the

fascia is divided if necessary to continue the dissection into the crural canal. If the mass is not continuous from the superficial to the deep nodes, the fascia lata is divided, and the deep nodes freed from the femoral vessels and removed.

5. The patient is then placed in the lithotomy position. An incision is then begun at the root of the penis passing around both sides, uniting beneath, and continuing along the raphæ of the scrotum, bisecting it. The suspensory ligament is divided and the dorsal vessels of the penis secured. The penis with the attached fat mass from the abdomen and groins is drawn downward. The dissection is carried on until the attachment of the cruræ to the pubic rami is met. These are clamped close to the bone and cut away. The stump is transfixed and tied and no hæmorrhage results. It is necessary to clamp, transfix and tie, for the arteries to the cruræ may otherwise retract and cause troublesome hæmorrhage. The corpus spongiosum is freed at a distance of about three-quarters of an inch in front of the bulb and cut across at this point, unless the membranous urethra seems sufficiently long. It is better to leave too much than too little urethra. The whole mass, the abdominal and inguinal fat containing lymphatics and nodes, the penis, and the cruræ are then removed in one mass.

6. The cut end of the urethra is then stretched to the lower part of the perineal incision, and a self-containing catheter placed through the urethra into the bladder. A drain is placed in the perineum about the urethra, also in the wound of the abdominal skin apron on either side, and both in the incision and in Scarpa's triangle.

7. The manner of suturing the scrotum, whereby it is lifted upward, is important, so that it will not become soiled by urine.

The author's operative results and those from the literature are considered, followed by case reports and a bibliography.

## AMERICAN PROCTOLOGIC SOCIETY

MEETING HELD AT ATLANTIC CITY, JUNE 22-23, 1914

**Holding, A. F.: Pseudo-Intestinal Stasis and Real Intestinal Stasis, Demonstrated Röntgenologically.** *Tr. Am. Proc. Soc., Atlantic City, 1914, June.* By Surg., Gynec. & Obst.

Holding called attention to many anomalies of visceral position and progress of the bismuth meal that had been interpreted as pathological, and which were really physiological or anatomical and completely compatible with health, laying stress upon the fact that the ileum enters the cæcum normally at an angle, and unless associated with proximal distention, a diagnosis of Lane's kink is not justified.

He emphasized the point that delayed progress of the bismuth meal is not significant of obstruction unless it is more than 6 hours behind the normal schedule and associated with marked distention of the viscus proximal to the locus of obstruction. Proximal distention with obstruction to the bismuth column are the two cardinal diagnostic points of real intestinal stasis. Intestinal obstruction, due to tumors, is much easier to diagnose than intestinal stasis, because the defect in the bismuth shadow made by the tumor is more definite than that made by adhesions, veils, or membranes.



**MacMillan, J. A.: The Technique of the Perineal Operation for Extirpation of the Rectum.**

*Tr. Am. Proctol. Soc., Atlantic City, 1914, June.*

By Surg., Gynec. & Obst.

The most important part of the preparatory treatment is a colostomy which should be done one week before the radical operation. The radical operation may be divided into four stages:

1. After thorough dilatation of the sphincters an incision should be made at the mucocutaneous junction and the bowel dissected from the surrounding tissue. This can be done without destroying the use of the external sphincter. The first stage of the operation includes the division of all the structures up to the levator ani. Before the division of the levator, the first stage should be thoroughly completed and the hæmorrhage controlled with pressure.

2. The fibers of the levator ani may be readily divided by passing a blunt hook above a bundle of them and drawing downward on the hook. This procedure is repeated until the muscle is completely severed. When this is completed the hæmorrhage should again be controlled and a thorough examination made of the motility of the bowel and the extent of the disease.

3. The peritoneum may be entered by a blunt instrument and separated anteriorly and laterally from the bowel, leaving the mesosigmoid as the only attachment. Should it be necessary to divide this, care must be taken to preserve circulation. If the mesentery be severed remotely from the bowel wall, the arterial supply will be assured.

4. The fourth stage consists of the excision of the diseased portion of the bowel, suturing of the distal end of the remaining bowel to the skin and the provision of adequate gauze drainage posteriorly.

**Hill, T. C.: Anal and Rectal Growths of Benign or Doubtful Character.**

*Tr. Am. Proc. Soc., Atlantic City, 1914, June.*

By Surg., Gynec. & Obst.

Hill states that in a personal series of 3,000 rectal cases previously reported there were 49 benign and 76 malignant growths of the rectum. The large majority of these tumors were characteristic and the differential diagnosis was easily made. Still, a few malignant growths seen in an early stage, and in some unusual benign types associated with ulceration, as well as in some of the perirectal abscesses and fistulæ located above the levator ani muscle, were of such an unusual nature that the exact diagnosis was not easily determined.

The writer emphasized the fact that the operative measures to be employed differ radically in each of these conditions. An excision of the rectum is necessary for the malignant cases, a simple local excision is all that is required for the benign growths, whereas incision and drainage will suffice for the abscesses and fistulæ. Therefore, a doubtful case cannot be treated as a breast case in which a complete amputation for a benign growth may be justified. In the case of the rectum there is not only mutilation but

a high mortality and a serious impairment of function as well to be considered. Furthermore, the removal of a specimen of a suspected tumor is not now approved and this complicates the problem still more.

The histories of several cases which illustrate the doubtful nature of some borderline conditions occasionally found in the rectum are cited. They tend to show that aside from benign growths, some of which have many of the characteristics of malignancy, there are certain abscesses which develop in the loose cellular tissue of the retrorectal and pelvirectal spaces which are even more so. These indurated, irregular swellings bulging into the rectal ampullæ at first resemble very closely the sensation imparted to the finger in malignancy. A little later they become soft and boggy and fluctuation is perceptible when all doubt as to their nature is removed. The sinus from an old fistulæ occupying these same spaces is apt to be much more perplexing than an abscess. As the slow, suppurative process goes on the rectal wall is crowded into the lumen of the bowel and assumes an irregular, indurated outline which is very suggestive of cancer. Other conditions of similar doubtful character such as gummatous growths and tubercular ulceration are also discussed.

**Yeomans, F. C.: Coccygodynia; a New Method of Treatment by Injections of Alcohol.**

*Tr. Am. Proctol. Soc., Atlantic City, 1914, June.*

By Surg., Gynec. & Obst.

Simpson of Edinburgh first described the disease as a definite entity and gave it the name of coccygodynia in 1859. The main etiological factors are trauma, exposure to damp and cold, toxæmia, and functional and organic diseases of the central nervous system, as hysteria or tabes dorsalis. It usually occurs in women.

The symptom is a characteristic spasmodic aching pain in the region of the coccyx, which is increased by sitting or rising and, at times, by urination or defecation. Pain may be localized or radiated to the bladder or perineum.

The diagnosis is established by a thorough examination, both general and local. The former includes particularly the nervous system and spinal column; in women the uterus and adnexa; and in men the prostate, seminal vesicles, and urethra. Local examination is made by inserting the index-finger into the rectum and palpating the coccyx between it and the thumb outside. The position, contour, mobility, and tenderness of the coccyx are thus determined. The soft parts intervening between the coccyx and anus are now compressed and the point of maximum tenderness is thus located, usually just beyond the tip of the coccyx. Careful examination is made of the anus to exclude fissure, inflammation of the crypts of Morgagni, blind internal fistula, hypertrophied anal papillæ, and foreign bodies. Proctoscopy rules out rectitis.

The prognosis hitherto has been better in the traumatic cases than in those of frank neuralgia or

neuritis. The writer confidently predicts that the treatment proposed will render the latter equally amenable to treatment.

The methods of treatment that have been employed with varying results include local applications, electricity, subcutaneous divisions of the muscles and ligaments attached to the sides and tip of the coccyx (Simpson), and finally resection or excision of the coccyx (Tillaux, 1885). The latter has fortunately been abandoned, except in those rare cases where the coccyx itself is diseased or deformed. The pelvic floor was weakened and the pain not relieved. These therapeutic methods rested on the erroneous idea that the pain resided in the coccyx proper, while in fact we are dealing in some cases with a neuralgia and in others a neuritis of the coccygeal plexus or nerves.

The writer proposes a treatment based on the suggestion of Schlosser in 1907, of injecting 70 to 80 per cent alcohol in sensory nerves, thereby causing their degeneration, as practiced with marked success in trifacial neuralgia.

The technique is simple and can be carried out in

the office under strict aseptic precautions. The patient with empty bowel is placed on a table in the Sims position and the skin about the coccyx painted with tincture of iodine. A 2 ccm. Luer or similar syringe is filled with 80 per cent alcohol and armed with a two-inch needle. The right index-finger is inserted into the rectum and the point of maximum tenderness is determined by counter pressure with the thumb outside. Maintaining the finger in the rectum to guard against puncture and as a guide, the needle is introduced through the mid-line directly to the painful spot, and 10 to 20 minims are injected slowly.

The needle is withdrawn and its puncture sealed with collodion. The pain from the injection lasts a few minutes and is followed by a dull ache which may last a day or two. From three to five injections are usually required at intervals of about one week. The writer reports seven cases, all women, treated from two months to four years ago. They required three, four, or five injections each at intervals of about one week. Relief was prompt and complete and all the patients have remained well.



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# INTERNATIONAL ABSTRACT OF SURGERY

AUGUST, 1914

## MONTHLY COLLECTIVE REVIEW

### CRITICAL REVIEW OF THE LITERATURE ON THE PROBLEM OF GENERAL ANÆSTHESIA

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#### CHLOROFORM — DOSIMETRIC METHOD

THE last (1911) report of the Special Chloroform Committee of the British Medical Association (1) is one of great value, as therein are collected many important papers covering the great amount of experimental work on the dangers of chloroform anæsthesia so carefully investigated by the English school. The work of this committee was especially directed to determining the upper limit of safety for the administration of chloroform vapor.

"The ultimate conclusions at which the committee has arrived with regard to the dosage of chloroform may be summed up as follows:

"1. That a one per cent vapor is generally insufficient to induce surgical anæsthesia in an adult; at all events, within the limits of time ordinarily available.

"2. That a two per cent vapor of chloroform in air is sufficient to induce full surgical anæsthesia.

"3. That in pathological conditions, such as depraved blood states, some diatheses, grave pathological states, the safety dose or percentage is below two per cent, and must be determined in each case.

"4. That the dosage for the maintenance is of as much importance as that of the induction period, and the neglect in recognizing this has caused many deaths, and constantly delays convalescence.

"5. That no definite limit of safety can be fixed for this dose, but that it is in most cases one per

cent at first, and must be lowered as time goes on." (2)

Since the appearance of this report the clinical study has been continued by the secretary of the committee, Dudley W. Buxton. In a paper read before the International Congress of Medicine, Buxton argues very strongly for an exclusive use of the dosimetric method of chloroform anæsthesia. He says in part: "Clinical experience supports the experimental results of Sherrington, Sowton, and others, that, whereas the organism can be 'taught' to tolerate even relatively high percentage vapors if the strength is gradually reached, yet a sudden use at the commencement of an inhalation of such a strength results in collapse and probably death. When we are working out the physiological action of a new drug we use the utmost care to measure the strength employed. When our results are standardized we employ such and such a strength per kilo of body weight and know that we shall in every case insure a certain result which we anticipate. In the case of chloroform we have now standardized for the normal person that a strength of vapor somewhere about two per cent (by volume) will induce anæsthesia, that less will only cause sleep, while a greater strength will lessen the activities of respiration and circulation and may at any moment cause cessation of breathing and heart standstill. And yet the methods most generally employed provide no means by which the administrator can even know the strength of vapor—that is, the dose per kilo—he is

giving, while he possesses no accurate control over the unmeasured quantities of the drug employed. He is forever experimenting upon his patients, and the results he obtains depend wholly upon his personal acumen as an experimenter. He depends solely upon his powers of observation; if the results consequent upon his unknown doses seem to be touching upon the zone of danger he limits his supply of chloroform, but by how much he does not know. That many men can intuitively stumble upon a safe dose when employing undosimetric methods is obvious, and that experience will enable such to anticipate events is undoubtedly true; but the system lacks the imprimatur of science and is apt to fail at critical moments." (7)

Buxton, on the basis of a very extensive experience, concludes his paper by saying, "I believe, both from experimental and critical evidence, dosimetric methods of giving chloroform are the only safe means of exhibiting that drug, and by their use its dangers are abolished or so far lessened as to be negligible."

For an apparatus, Buxton makes use of the Vernon Harcourt regulator. According to Harcourt's own experiments, the percentage of chloroform, which from theory should be two per cent, varies according to the depth of respiration from 1.54 per cent to 2.26 per cent, though the mass—i. e., grams per mm.—of chloroform remains quite constant (3). As volatile anæsthetics act entirely according to their tension (9) the mass inhaled is of no consequence; an error in the estimated dosage of nearly 25 per cent does not allow very accurate deductions as to the strength of chloroform required, and by the use of such an apparatus no fundamental facts as to the determination of the anæsthetic tension of chloroform could be made. Such an inhaler, however, would, in the hands of one acquainted with the sign of variation under given conditions, render it practically impossible to give a fatal overdose of chloroform, and is therefore better than a mask from which no indication of the strength could be obtained. The Connell anæsthetometer if calibrated and properly modified for chloroform would deliver chloroform vapor with great accuracy, independent of the volume of respiration.

Buxton's contention that the dosimetric administration of chloroform renders the dangers thereof negligible is undoubtedly well taken, so far as immediate sudden death is concerned, as thereby an excessive tension of chloroform cannot suddenly overwhelm the heart. Sherrington and Sowton (4) have shown that the entrance of chloroform into the cardiac tissue and its withdrawal from

that tissue follow closely, within a wide range of dosage, the solution tension of the chloroform in the perfusing solution; also that the degree of depression of the heart was a function of the solution tension of the chloroform. Embly (5) has shown that when air containing more than two per cent of chloroform was administered in the inspired air, slowing of the heart ensued, and that when higher percentages were employed the degree of the inhibition was rapidly intensified. Because the margin of safety is very narrow between a tension of chloroform dangerous for the heart and the tension used during the induction of narcosis, deaths in chloroform anæsthesia are very apt to occur in the early stages. If as Buxton (7) recommends, chloroform is never administered stronger than two per cent (by volume) such deaths can be avoided, a dosimetric method of administration is obviously a necessity.

All trace of cyanosis must be absolutely avoided when using chloroform, as Sherrington and Sowton (6) have shown that oxygen-want intensifies the action of the same tension of chloroform on the heart and other tissues and that the depression so caused is more difficult to remove.

As yet we do not know whether or not the dosimetric method will render delayed chloroform poisoning less likely to occur. Clark (11) states, without reference, that experimental work has shown that chloroform is even more likely to cause delayed poisoning in pregnant dogs and cats than in non-pregnant individuals.

Using an accurate dosimetric method and with the avoidance of cyanosis, the question of delayed chloroform poisoning must be re-investigated.

#### ETHER — DOSIMETRIC METHOD

It is not necessary to adopt the dosimetric method of administering ether from the point of view of the safety of the patient, as is the case when chloroform is used. Its value is in teaching the anæsthetist the potency of the drug; the degree of anæsthesia that can be produced by various tensions; the time it takes to saturate the body up to the anæsthetic tension of 50 mm., and, finally, that there is no appreciable alteration in the tension required caused by variation in age, sex, or chronic alcoholism (12).

For the dosimetric administration of ether the apparatus devised by Karl Connell (13, 14) of Roosevelt Hospital, New York City, though at first glance it may appear complicated and impracticable, is, as a matter of fact, very simple and easy to handle. It should always be used for intratracheal or for pharyngeal insufflation. When used in ordinary work it should be attached



to an air-tight mask and face-piece, such as is used in gas-oxygen-ether anæsthesia.

The accuracy of the Connell apparatus is very great, as has been shown by Boothby and Sandiford (17). It certainly does not vary more than 3 mm. from the theoretical tension as shown by their experiments in which the tension delivered by the Connell apparatus was controlled by passing the delivered mixture through a Waller gas balance.

As there are three ways of stating the proportion of ether or other gas present in a mixture and as confusion occurs if one is not on guard to distinguish these forms one from the other, it is necessary to refer to this in some detail:

1. The proportion of ether may be expressed as percentage by weight; that is, 15 per cent by weight of ether and 85 per cent by weight of air; there is no justification for the use of this method.

2. Or the same dosage can be expressed in per cent by volume; that is, 6.38 per cent by volume of ether vapor and 93.62 per cent by volume of air, both of course at the same temperature and pressure. Percentage by volume is the method usually adopted by the pharmacologists.

3. Or, finally, it can be expressed in millimeters of mercury, representing a fraction of the barometric pressure. For instance, with a barometer of 760 mm. the volume per cent of 6.38 would mean  $760 \times \frac{6.38}{100} = 48.5$  mm. On the other hand, at Colorado Springs with a barometer of 630 mm. a volume per cent of 6.38 would give a tension of only 40.2 mm.—a tension not sufficiently strong to keep the patient anæsthetized. As the volatile anæsthetics obey the well-known gas laws and form compounds with the protoplasm of the cells in a quantitative way, directly according to the tension of the anæsthetic vapor, it is advisable to use that standard of expression which both represents the action of the drug and also remains unaffected by barometric changes.

Boothby and Sandiford (17) give the following table illustrating how the Connell apparatus, when calibrated in tension, adjusts itself to barometric changes, and, conversely, how it does not do so if calibrated in percentages by weight or percentages by volume. Set at the same point the apparatus would deliver according to the three systems of expression as follows:

9.46% by wt. = 3.91% by vol. = 24.6 mm. at 630 mm. and 21°, Colo. Springs (6000 feet).

7.78% by wt. = 3.18% by vol. = 24.8 mm. at 780 mm. and 21°, sea level.

Connell (15) gives very interesting curves for the ether pressure required in the alveolar air, and

shows that in the preliminary stage an ether tension as high as 182 mm. can be administered with safety and that for the inductive period it must at least be over 100 mm. in order that the induction may not be unduly prolonged. After five minutes the curve falls and reaches 90 mm. in ten minutes when surgical relaxation becomes complete. During the next half hour the curve scales downward, reaching a pressure of about 50 mm. in thirty or forty minutes. He shows that on this tension of 50 mm. as a base, anæsthesia can be maintained for men of every type for many hours without increasing or decreasing the depth of narcosis.

The curve worked out by Connell has been carefully checked by Boothby (12) and his investigation confirms the curve as given by Connell. Boothby, however, believes it is distinctly safer to allow the inductive period to take fifteen minutes and during that time not to force the ether tension materially above 100 mm. Most of the latter's investigations were made on patients on whom Prof. Cushing performed a cerebellar operation, thus necessitating a prone position with the head supported by a special rest. These operations frequently lasted three hours. The patients were carefully placed in the position in which they were to remain during the operation and the ether started. It was therefore necessary to so administer the anæsthetic as to cause no excitement, struggle, or scarcely a movement on the part of the patient. To produce smooth motionless induction, it is necessary that the ether tension be only gradually brought up to 100 mm.—a period of five or six minutes—maintained at this level for seven to ten minutes, and then gradually lowered to the true anæsthetic tension of 50 mm. The time required for induction varies materially and depends on the size of the patient and the rapidity of the circulation as compared with the size of the body—the smaller the patient and the greater the volume of blood passing through the lungs per minute the quicker will he be anæsthetized and also the more rapidly will he recover on removal of the anæsthetic.

Although, for the reasons cited, patients are found to vary materially in the length of time required to saturate their bodies up to 50 mm. of ether vapor, yet no measurable difference in the final tension has been demonstrated. In the patients thus studied the anæsthetic tension required was the same, regardless of age, sex, or condition of chronic alcoholism. In regard to the influence of age, two cases were cited (12) in babies sixteen hours and nine months old, which required the same ether tension of 50 mm. to maintain anæsthesia, though on account of the rela-



tively rapid circulation the saturation was quickly accomplished. It was likewise pointed out that the anæsthetic tension could not vary with age because in the case of the baby sixteen hours old, had an operation occurred a few hours earlier, before parturition, the fœtus would have been saturated up to the tension of 50 mm. requisite to narcotize the mother. It is well known that pregnant women can be anæsthetized with safety.

Morphine up to doses of  $\frac{1}{6}$  gr. cannot be demonstrated to have any effect on the anæsthetic tension of ether (12).

#### ETHER — OPEN-DROP METHOD

Largely through the influence of the Mayo clinic (31), the open-drop method of ether anæsthesia with the use of a simple wire mask to prevent the wet gauze from lying directly on the patient's face, has supplanted the various forms of ether cones. The use of the drop-method together with the realization that stertorous obstructive respiration, even if not of sufficient degree to produce cyanosis, can be avoided by the proper control of the air-way together with the administration of an even and not too concentrated ether, has in the last few years greatly improved the results obtained by the exhibition of ether as an anæsthetic. It is by far the best method for routine work.

The question of the ether percentage obtained by the use of this method has been dealt with quite fully by Boothby (18). He has shown that small amounts of ether poured upon the mask will easily produce a tension of ether in the inspired air sufficient to etherize a patient, provided the volume of air breathed by the patient does not exceed twenty liters per minute; if the volume of respiration is over twenty liters per minute, it is difficult and sometimes impossible for the inexperienced to produce a sufficiently high tension so that the patient is quickly etherized. He also pointed out that under such conditions the vaporization of the ether could be aided by alternately placing the warm hand of the administrator on either side of the mask, but in so doing care must be exercised not to hinder in any way the passage of air to and from the patient.

#### THE ANÆSTHETIC TENSION OF ETHER VAPOR AND THE LAWS GOVERNING DOSAGE

The theoretical side of anæsthesia is very well set forth by Meyer and Gottlieb (8).

They emphasize the fact that (9) "a certain degree of saturation of the tissues with the anæsthetic corresponds to every variation of the partial pressure of the gas in the alveolar air. The

depth of anæsthesia is consequently at every moment dependent on the partial pressure of the anæsthetic in the gas mixture respired.

"From this law, first propounded by the French physiologist, P. Bert, follows the extremely important conclusion, for the management of anæsthesia, that the depth of narcosis and the danger thereof is not at all dependent on the absolute amount of the anæsthetic which has been used, but upon the concentration of the anæsthetic in the respired air. The control and modification of the degree of action, which with non-volatile drugs is attained by modification of the absolute size of the dose, is, during the administration of gases, attained by the modification of the concentration administered. Consequently in every moment of the anæsthesia a sufficient dilution of the anæsthetic with air is an essential condition."

That the depth of anæsthesia is eventually dependent on the tension of the anæsthetic in the inspired air is of course true; it is, however, immediately dependent on the tension of the ether in the central nervous system. Both Connell and Boothby have found that only slight variations, if any, occur in the anæsthetic tension required by human beings whose central nervous system is not otherwise under the influence of drugs or toxæmias. The divergent results of previous observers has been due to the fact that allowance was not made for the time requisite to bring about a condition of equilibrium in the tension of the anæsthetic in the central nervous system and the inspired air.

Boycott, Damant, and Haldane (24) have studied the rapidity of saturation and desaturation of the body for nitrogen up to a pressure of six atmospheres. According to their calculation, the body of a man would be half-saturated with the excess of nitrogen in twenty minutes; three-fourths saturated in forty-six minutes, etc., the pressure remaining constant. They also point out that the rate of saturation and desaturation would vary in different individuals according to the relative mass of blood and rate of circulation. In the same individual different organs would be more or less quickly saturated and desaturated, according to the proportional volume of their blood supply.

The term "anæsthetic tension" has been adopted by Boothby (12) to express the value of the lowest partial pressure of ether vapor which, when continuously respired, will maintain an ideal surgical narcosis after equilibrium has been obtained between the tension of ether in the inspired air, alveolar air, blood, and tissues.



The experimental data given by Boothby "show that surgical narcosis is produced by a tension of 50 mm.—a higher tension produces a dangerously deep narcosis, and a lower tension, an inconveniently light anaesthesia.<sup>1</sup> The percentage saturation of the nerve-cell caused by any given tension of ether is not known. However, it can be assumed that the same degree of saturation is always produced by the same tension, and that eventually a correct dissociation curve can be determined as in the thoroughly studied reversible reaction  $\text{Hb} + \text{O}_2 \rightleftharpoons \text{HbO}_2$  in which the percentage saturation of the haemoglobin with oxygen is dependent on the oxygen tension to which the haemoglobin is exposed.

"If such be the case, our conception of the theory of production, maintenance, and recovery from anaesthesia can be rendered more complete by the following hypothetical formula. Let Mn represent the molecules in the nerve-cell affected by the anaesthetic, and let An represent the group of inhalation anaesthetics. Then, substituting in the above haemoglobin-oxygen equation, the reversible reaction  $\text{Mn} + \text{An} \rightleftharpoons \text{MnAn}$  is seen to take place. In this reaction, the percentage saturation of the Mn molecules in the nerve-cells, and, therefore, the depth of anaesthesia, is dependent on the tension of the anaesthetic vapor to which these susceptible molecules are exposed. The percentage saturation caused by ether at a pressure of 50 mm. produces that degree of cell inhibition that is necessary for ideal surgical anaesthesia.

"The evidence here cited shows that there is little or no variation in the anaesthetic tension of ether in different individuals. Clinical experience has proven that some patients require by the ordinary methods of anaesthesia, more ether poured upon the cone than do others. The apparent discrepancy between these two facts can be accounted for by the following three factors:

"In the first place, as the author explained in an earlier paper (18), there is a wide variation in the amount of air breathed by different patients. Therefore, varying amounts of ether must be poured upon the cone to bring the fluctuating amounts of air up to the same tension. When attempting to obtain the higher tensions in larger amounts of air, the waste of liquid ether is tremendous, just as the amount of fuel necessary to increase the speed of an engine above a certain point is great in proportion to the result obtained.

"Secondly, the volume of blood flowing through the lungs per minute varies greatly, not only in different individuals, but at different times in

the same individual; further, the relative amount passing through the various organs will fluctuate from time to time. Accordingly, it is evident that the rate at which the brain, for example, becomes saturated or desaturated—that is, at the rate at which the patient becomes anaesthetized or recovers therefrom—depends upon the amount of blood flowing between the lungs and the brain—assuming the alveolar ether tension to remain constant. At present we have no means of estimating changes in the circulation rate, and therefore cannot calculate the exact value of this factor. That it is of considerable moment, however, can be judged from the experiments previously reported by the author, which showed that the rate of elimination of  $\text{CO}_2$  was dependent not only on the volume of respiration, but also on the rate of blood flow (25).

"The third factor is the possibility of a variation in the rate of chemical reaction due to slight changes in chemical environment. On account of the well-known influence that environment exerts on the rapidity of chemical reactions, it seems quite possible that even small changes in acidity, viscosity, permeability, or temperature might affect both the rate at which the union between the ether and lipid takes place during the period of saturation and also the rate at which dissociation occurs during desaturation on the reduction of the ether tension."

#### WARMING ETHER VAPOR

The question of the necessity of warming anaesthetic vapors has received considerable attention of late years. Confusion has arisen from not differentiating latent heat, the heat needed to convert a liquid into a gas, and the specific heat—the heat required to raise the gaseous mixture of ether and air up to the body temperature. In dealing with inhalation anaesthesia we are not concerned with latent heat because that is acquired from the surrounding air. The amount of heat required to raise the ether-air mixture from the temperature at which it is inspired to body temperature has been worked out by Boothby (18). His conclusions, based on experimental work, are that the loss of heat directly attributable to warming anaesthetic vapors is negligible in comparison to that from the body surface. He deems it far more important and practical to prevent the temperature of the patient from falling by keeping him dry and warmly covered.

#### NITROUS OXIDE-OXYGEN

Crile (23) strongly advocates a nitrous oxide-oxygen anaesthesia plus local anaesthesia of two

<sup>1</sup> Unless sensory stimuli are blocked by the use of a local anaesthetic.



kinds in all cases, one for immediate and the other for a later effect; in a considerable percentage of cases ether is also used to deepen the narcosis. The general anæsthetic is administered by nurses of exceptional capability, especially trained for the purpose with great care, and who have had much practical experience. Using the principle of "anoci-association," the mortality at Lakeside Hospital has been reduced from 4.3 per cent in 1908 to 0.8 per cent in the last 1,000 operations performed by Crile and his associate, W. E. Lower.

In Crile's clinic more attention has been paid to the refinement of the problem of anæsthesia than in any other clinic in the world. In attempting to apply this form of anæsthesia elsewhere no details can be eliminated, and these consist on the part of the surgeon in careful, delicate operating with large incisions and avoidance of the use of retractors; the use of local anæsthesia to prevent reflex hypertonicity of the muscles, thereby decreasing the amount of ether needed to produce a deeper degree of anæsthesia which otherwise would be necessary; and on the part of the anæsthetist, training and skill so that cyanosis is prevented, a clear air-way maintained, and the proper mixture of nitrous oxide, oxygen, and ether administered.

Straight nitrous oxide-oxygen anæsthesia without local anæsthesia and without ether as recommended by Prince (29) cannot produce, except in a small percentage of cases, the ideal and safe anæsthesia as represented by Crile's complete technique with a highly trained team.

The mechanical difficulties of nitrous oxide-oxygen-ether anæsthesia have been overcome by the use of the principles pointed out by Cotton and Boothby (16) and later adopted by Gwathmey and Woolsey (26), A. H. Miller (27), and others. These principles are: (1) Reduction of the pressure of nitrous oxide and oxygen to an easily controlled pressure of about 25 lb. to the square inch; (2) a visible method of estimating the relative proportion of each gas being administered; (3) easy addition of ether in appropriate amounts; (4) exclusion of air; and finally, (5) maintenance of an absolutely free air-way.

The desirability of nitrous oxide is increased as the necessity for ether is diminished. This factor depends on the surgeon and requires the adaptation of the technique used by Crile, which allows the use of a lighter zone of anæsthesia. This point will presently be discussed more fully.

Several instances of threatened coma and one case of death in coma (30) in patients suffering with diabetes have come to the author's attention, following nitrous oxide anæsthesia. Whether or

not the nitrous oxide was administered in such a way that cyanosis and oxygen-want also occurred, is not known. At all events there seems little justification, as yet, for the acceptance of the idea that nitrous oxide is absolutely harmless to the kidneys, as some writers and as the manufacturers of nitrous oxide claim.

#### SYNERGISM

Fuhner (28) has suggested the term synergism to denote either the one-sided or the reciprocal augmentation of the action of one drug by that of another. The synergistic action of morphine, nitrous oxide, and ether has been long recognized in a qualitative way. Crile's (23) technique is the practical application of this phase of pharmacology; he, however, goes even further and by the use of local anæsthetics renders it possible to use surgically a less profound general narcosis than would otherwise be necessary.

From the work of Crile, previously referred to, it is evident that the skillful application of the synergistic action of certain narcotics—general and local—has brought about an unequaled mortality record. In explanation of his results Crile has advanced the theory of anoci-association. However, to many of those familiar with the laws governing the absorption and distribution of anæsthetic gases and the probable tensions of such gases requisite to produce narcosis under a synergistic method of administration, it seems more satisfying to adopt a working hypothesis based on definite demonstrable facts in pharmacology, rather than on the more abstruse and less clearly defined data of anoci-association.

Connell's preliminary tensions of nitrous oxide and ether, that he has found necessary for producing complete surgical narcosis, agree very closely with some of the author's unpublished calculated values. Connell finds that the following mixture will take care of any case:

Nitrous oxide at a tension of  $650 \pm 20$  mm.

Oxygen at a tension of  $85 \pm 15$  mm.

Ether at a tension of  $15 \pm 5$  mm.

Nitrogen at a tension of  $10 \pm 5$  mm.

Only a slight percentage change in the tension of nitrous oxide can be accomplished by decreasing the oxygen tension; as it is not safe to lower the oxygen tension below 70 mm., any increase in the depth of narcosis that is required can only be obtained by the addition of ether. An ether tension in excess of 20 mm. will rarely be needed; however, even if more than 10 mm. are required the character of the narcosis departs from the desirable nitrous oxide type and tends rapidly to become similar to a straight ether anæsthesia.



The necessity for deepening the narcosis with ether can, however, be in part avoided by delicate operative manipulation but mainly by preventing the sensory stimuli from tending to awaken the patient; in other words, it is unnecessary to produce in the central nervous system such a degree of cell inhibition as would be the case if those cells were continually receiving stimuli.

It seems, therefore, that the explanation of the success of Crile's technique, in so far as it concerns the anæsthesia as distinct from the judgment and skill of the operator, is pharmacological instead of phylogenetic; that is, his method produces less injury to the organism as a whole; first, by taking advantage of the synergistic action of several narcotics, using none of them in an injurious dosage; and, secondly, by decreasing the amount of cell inhibition needed by making use of a lighter zone of anæsthesia through the avoidance of awakening stimuli rather than by the prevention of the "shock" or "exhaustion" that is assumed to be produced by these stimuli.

Recently a new combination of narcotics has been tried; namely, magnesium sulphate and ether. Meltzer and Auer (19) have shown that rabbits which have received 0.6 gm. magnesium sulphate per kilo, a dose insufficient to narcotize normal animals, can be completely anæsthetized by the administration of an ether tension insufficient to do so in a control rabbit. In a personal communication Meltzer has informed the author that he and Peck are studying this question on human beings and that the results are very gratifying.

If magnesium sulphate in small safe doses is found to materially reduce the tension of ether required to produce narcosis in humans, and if the antagonistic effect of calcium to magnesium sulphate can likewise be adopted in surgical anæsthesia, marked advance in our anæsthetic methods may shortly occur. The awakening effect of calcium injected into a rabbit was very strikingly demonstrated at the annual meeting of the Physiological Society in Philadelphia by Gates and Meltzer (22).

#### CENTRAL AND PERIPHERAL ACTION OF ANÆSTHETICS

Auer and Meltzer (20) have studied the effect of ether inhalation upon the skeletal motor mechanism and found, contrary to the general impression, that ether has a decidedly depressive effect on the peripheral nerves and muscles; they consider that ether, besides its undoubted central effect, is capable also of a curare-like action.

Githens and Meltzer (21) found, however, that the phrenic nerve and the diaphragm were distinctly less affected, "for after complete stoppage of the spontaneous respiration, indirect stimulation of the phrenic nerve as well as the direct stimulation of the diaphragm cause a fairly good contraction of that muscle. On the other hand, it is evident that the irritability of nerve and muscle lose a good deal in the course of ether anæsthesia and that toxic action upon the peripheral respiratory mechanism begins at an early stage of the etherization." They conclude, "therefore, that probably the intoxication of the peripheral respiratory mechanism has some share in the early stoppage of the respiration by ether anæsthesia."

On the other hand, Githens and Meltzer found that chloroform practically does not affect the irritability of motor nerves.

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# ABSTRACTS OF CURRENT LITERATURE

## GENERAL SURGERY

### SURGICAL TECHNIQUE

#### ANÆSTHETICS

**McCardie, M. B., Blumfeld, Hewitt, Waggett, and Others: Discussion on Posture in Relation to General Anæsthesia.** *Proc. Roy. Soc. Med.*, 1914, vii, Sect. Anæsthesia, 39. By Surg., Gynec. & Obst.

MCCARDIE opened this discussion, stating that the importance of posture in general anæsthesia can scarcely be overstated. Not striving to cover the whole ground, as done in such an admirable work as Hewitt's, he analyzed various postures as affecting (1) respiration; (2) circulation; (3) nerves of extremities; (4) muscles and joints; (5) viscera, as stomach, intestines, or kidneys.

A sleeping child is a criterion for study and its general semiflexion of joints a hint for anæsthesia. Operations on the upper part of the body suggest a higher position of head and shoulders than in operations on the lower half. In brain cases an extended head-rest, and, for the prone position, elevating pads under the clavicles and iliac crests are necessary to relieve respiration.

Throat operations demand a posture which favors exit of blood, i. e., lowered head. It may develop that intratracheal insufflation will make possible an upright position and yet avoid gravitation of blood into the trachea. The head extended over the end of the table is against the rule for semiflexion in spite of its favoring exit of blood. Sitting upright is a much discussed posture, one point being that the light degree of anæsthesia allows it; another, against it, is chloroform with its alleged danger of syncope, though some claim exemption from experience of this. The semirecumbent posture is condemned. The danger of brachial paralysis from extended arms is evident. Operations on the lung and pleura demand careful attention so as to give the good lung the utmost freedom.

The Trendelenburg position is one involving many considerations and much difference of opinion based on conditions present in the cases discussed. It is the position in health assumed for easy breathing. More bronchitis was found after it. Pneumonia was more common, also pulmonary embolism, but here the flexion of legs was a factor to consider in the consequences. In eight cases of ether and eight of chloroform almost no urine appeared in the bladder. Aphasia and hemiplegia followed in one case; in another, death upon raising a patient with valvular disease of the heart. In 1913, GATCH, GANN, and MANN reported a thorough experimental study of this

position finding asphyxia more fatal in it than in the horizontal. In conclusion, it should be tolerated as little and for as short a time as possible and with the legs in a position of ease: never in organic diseases of the heart, lungs, arteries, or kidneys, nor in obesity. The joints suffer from constrained positions more than is realized, as Goldthwait has pointed out. This indicates attention to the "position of ease" for joints in any posture. The lithotomy position must not be extreme, to protect respiration and the joints of the back.

The post-operative posture should be a natural one as in sleep; for persistent vomiting after recovery the sitting posture may relieve, helping the stomach to empty itself naturally; or, for that dreadful condition, dilatation of the stomach, the prone position is helpful, even having restored one in "extremis."

BLUMFELD rallied to the defense of the Trendelenburg position under chloroform for shock, and pointed out that the sitting position is dangerous under a deep anæsthesia when not under a light.

HEWITT also showed some advantage in the Trendelenburg position for shock, the embarrassments therefrom being due to obstructed air-way and usually removable. The head-down position in transferring patients after operation is bad, the lateral being desirable.

WAGGETT advocated the sitting posture for nose and throat cases as helping the surgeon and not harmful for the patient, the anæsthesia not being induced after an initial low posture of course; the anæsthesia moreover being a light one. HARMER, on the other hand, advocated the lateral position for nose and throat cases.

FRANK W. PINNEO.

**Gwathmey, J. T.: Oil-Ether Anæsthesia.** *N. Y. M. J.*, 1914, xcix, 211. By Surg., Gynec. & Obst.

Gwathmey refers to the infancy of anæsthesia as still shown by our limited knowledge of a great number of substances having some anæsthetic property; for there are nearly a thousand of them and we have adequate knowledge of only about a dozen as anæsthetics.

Animal experiments to the number of about twenty-four were performed to ascertain the value of ether as an anæsthetic when introduced by rectum. The solution first used was about 500 ccm. of 5 per cent ether in normal salt solution. Ether in oil was then substituted, the oil preventing irritation and holding the ether in solution, while

the ether, by the change from liquid to gas in the rectum, checks both evaporation and absorption, thus regulating the dose steadily. Another regulating factor is the fact that the elimination of ether from the lungs is faster than the absorption from the rectum. Experiments on various oils for the purpose were made and caron oil chosen because it parts with its oil in about one-fourth the time of other oils.

Experiments were made on dogs, with various proportions of olive oil and ether resulting in the adoption of a solution of from fifty to seventy-five per cent ether, according to the age and size of the individual; the quantity used to be about one ounce to every 20 pounds of body weight. The injection is made all at once, following a preliminary hypodermatic of morphine and atropine and a rectal injection of five to twenty grains of chloretone, the rectum being clean. When the operation is finished or in case the dose proves too much, the oil-ether mixture may be withdrawn by a pair of small rectal tubes inserted. In conclusion, an irrigation with cold soapsuds follows and, finally, 2 to 4 ounces of olive oil are introduced and then a pint to a quart of cold water. Recovery of consciousness comes in fifteen to thirty minutes.

Safety governed the earlier work on human beings and the lower percentages of ether were insufficient for a surgical anaesthesia in some, while in others supplementary ether by inhalation was needed. Now, by the above method, results nearly ideal in every respect are assured. No rectal troubles ensue. Further development is directed in three ways: (1) as a distinct method; (2) with an inhalation method—gas, ether, or chloroform; (3) with a local anaesthetic, thus broadening the field of local anaesthesia.

FRANK W. PINNEO.

**Gwathmey, J. T.: The Technique of Oil-Ether Colonic Anaesthesia.** *N. Y. M. J.*, 1914, xcix, 630.  
By Surg., Gynec. & Obst.

For this method of anaesthesia the apparatus is a long rectal tube, a clamp for it, a glass funnel, and a Lockwood tube. Preparation consists of clearing the rectum by castor oil and enema, chloretone, five to ten grains, in ether and olive oil by rectum, morphine one-quarter grain with atropine one one-hundredth grain, hypodermatically, and, finally, ether, seventy-five per cent in olive oil, injected by gravity into the rectum, the quantity about one ounce for each 20 pounds of the patient's weight; i. e., 8 oz. for an average adult of 160 pounds, taking one minute for each ounce, the patient in the Sim's position. Unconsciousness may be expected in five minutes and anaesthesia in about ten more.

Care to maintain a free air-way for breathing is very important, as in any anaesthetic. Supplementary ether inhalation may be required for induction. At any time the residual oil-ether in the rectum can be removed by lowering the funnel tube, and at the end of the operation, beside this, cold soapy water is injected by this tube and re-

turned by the other introduced alongside, and finally, a pint to a quart of cold water is left in. Reflexes remain active, and stertor and puffing of the lips are not allowed. Caution is urged against signs of too profound an anaesthesia and against the danger that the simplicity of method may be a snare to the unwary.

FRANK W. PINNEO.

**Boothby, W. M. and Sandiford, I.: The Calibration of the Waller Gas-Balance and the Connell Anaesthetometer.** *J. Pharmacol. Ex. Therap.*, 1914, v, 369.  
By Surg., Gynec. & Obst.

The calculations necessary for calibrating the Waller gas-balance for ether are given in detail. Tables are appended to simplify the corrections needed for variations in barometer, temperature, water, vapor, and alcohol content of ether. It is probable that the corrected tension is accurate to within  $\pm 0.2$  mm.

By means of the Waller gas-balance, thus calibrated, the Connell anaesthetometer has been tested and it has been found that the tension of ether delivered by the apparatus was on the average 2.1 mm. too high, the maximum error being +3.3 mm. The Connell apparatus adjusts itself to atmospheric conditions if the ether delivery is expressed in tension and not in percentages.

**Boothby, W. M. and Peabody, F. M.: A Comparison of Methods of Obtaining Alveolar Air.** *Arch. Internal Med.*, 1914, xliii, 497.  
By Surg., Gynec. & Obst.

As a result of an extensive comparative study of various methods for obtaining the tension of gases in the alveolar air, with especial reference to the use of these methods in clinical work, the authors have arrived at the following conclusion:

The Haldane method gives results which approximate closely the average gaseous composition of the alveolar air. It is the most reliable and accurate method when used on intelligent and experienced subjects. The necessity, however, of obtaining very deep and forcible expirations limits its usefulness when working with untrained or sick persons.

The Lindhard method and its modifications give values analogous to those of the Haldane method. The method has the advantage, however, of not requiring such deep expirations as the Haldane method. The technique of taking the samples is, however, much more difficult for the observer. In certain types of pathological cases, notably in unconscious or very sick patients with a large alveolar ventilation, the method is useful and the technique simple.

The Plesch method gives values for the carbon dioxide tension which are higher than those obtained by the Haldane and Lindhard methods. Successive determinations give sufficiently constant values. The technique of the method both for the observer and for the subject is so simple that the method is especially useful for routine clinical work.



## SURGICAL INSTRUMENTS AND APPARATUS

**Sinclair, D. A.: A Retro-Urethral Cystoscopic Guide for External Urethrotomy.** *N. Y. M. J.*, 1914, xcix, 677. By Surg., Gynec. & Obst.

In order to obviate the difficulties of external urethrotomy without a guide, Sinclair has assembled the following instruments: a trocar and cannula (15 French) three inches long; a straight observation cystoscope (12 French) five inches long; a Herzfeld eustachian catheter (12 French) with spiral end and filiform bougie to fit catheter.

The technique is as follows: Under local or general anæsthesia with the bladder full of urine or filled with boric solution from a pressure syringe with the patient in slight Trendelenburg position the trocar cannula is pushed, slightly antero-forward, into

the bladder one inch above the pubic symphysis. After removing the trocar and irrigating the bladder through a soft catheter the bladder is filled with boric solution, the cystoscope introduced through the cannula and the internal urethral meatus located. After placing the cannula in proper position the eustachian catheter is substituted for the cystoscope and the urethra catheterized down to the urethral stricture. The patient is then put in lithotomy position for a perineal incision down to the catheter, whereby the urethra is opened for perineal drainage and the stricture field eradicated, the suprapubic puncture closing without drainage. The author also shows a modification of the cystoscope so that the internal urethral mouth may be catheterized with a flexible metal bougie under direct vision through a catheterizing instrument. CHAS. E. BARNETT.

## SURGERY OF THE HEAD AND NECK

## HEAD

**Bloodgood, J. C.: Carcinoma of the Lower Lip; Its Diagnosis and Operative Treatment.** *Surg., Gynec. & Obst.*, 1914, xviii, 404. By Surg., Gynec. & Obst.

In the Surgical Pathological Laboratory of the Johns Hopkins Hospital between the years 1892 and 1913 the records of 200 cases of lesions of the lip have collected. Of these 15 are distinctly benign, and all have remained well since the excision of a V-shaped piece of the lower lip including the lesion. These lesions may be looked upon as precancerous. They are identical with the first local trouble on the lip as described by patients who come under observation with cancer. There are 18 examples of malignant warts which represent the early stage of cancer in a wart: 17 of these patients were permanently cured by complete local excision of the cancer. It seems unnecessary at this stage of the disease to remove the lymphatic glands of the neck. In 167 cases the lesion was a fully developed carcinoma. Among these there were but 5 examples of *carcinoma basocellulare* (Krompecher). Among these 167 cases, in 29 the disease, on account of its local infiltration, glandular or bone involvement, had become inoperable—about 12 per cent.

The author shows that the local propaganda of education has increased, in the past five years, the per cent of benign lesions from 4 to 18, and has decreased the inoperable cases from 18 to 8 per cent.

The investigation of the end-results of all cases of the fully developed carcinoma of the lower lip in which five years or more have elapsed since operation demonstrates that the glands below the jaw should always be removed. When only the lesion of the lip has been excised there have been 37 per cent of late recurrences in the glands of the neck. Operations at this stage rarely accomplish a cure, perhaps in only 20 per cent of cases.

When the operation consisted of the removal of the lesion on the lip and of the glands of the neck, and when they have shown no metastasis under the microscope, 95 per cent have remained well; when, however, the glands did show metastasis only 50 per cent were cured.

The investigation also discloses the danger of any method of treatment of the disease on the lower lip which fails to cure the local lesion or to remove the glands of the neck. While the per cent of cures in the three primary groups are respectively 63, 95, and 50 per cent, it falls in the recurrent cases to 20, 60, and 20 per cent, respectively. In all forms of cancer the two factors over which we have control are the duration of the disease and its surgical treatment. To increase the number of cures of cancer of the lip people must be educated to the potential dangers of the smokers' burn at the mucocutaneous border of the lip, of unhealed blisters and ulcers and all wounds, of warts and any area of irritation. If such a lesion does not disappear spontaneously within a month, it should be excised with a margin of healthy tissue. The piece should be promptly subjected to microscopic examination and if carcinoma is present the operation upon the glands of the neck should follow.

The author also describes in detail a method of removing the glands of the neck which promises better results in cases in which the glands are involved.

Comparative Table of Results in Cancer of Lower Lip, as Ascertained in 1908 and 1913 in the Surgical Pathological Laboratory of the Johns Hopkins Hospital and University:

	TOTAL 1908		1913
Benign lesions.....	15	6=40%	9=18%
Malignant warts.....	18	15	3
Cancer totals.....	167	120	38
Operable.....	138	103	35
Bone involved.....	10	8	2
Inoperable.....	19	18	1
		18% }	8.5% }

This table shows that the local propaganda of education has increased the benign lesions in which there are 100 per cent of cures from 4 to 18 per cent, and decreased the hopeless or inoperable cases from 18 to 5 per cent.

The period 1908 represents 19 years — from 1889; the period 1913 — five years.

Table of Per Cent of Cures in the Operable Cases of Cancer Up to 1908:

Excision of	Primary			Recurrent		
	Total	Cured	Local Recurrence	Total	Cured	Local Recurrence
Lip lesion.....	11	7=63%	1	5	1=20%	3
Lip and glands—						
No metastasis....	21	20=95%	1	5	3=60%	2
Metastasis.....	12	6=50%	1	5	1=20%	4
Totals.....	44	33=75%	3	15	5=33%	9

This table shows that any previous treatment of the little lesion on the lip which is not effectual reduces the chances of a cure from a later proper operation from 75 to 33 per cent.

In cancer of the lip the glands of the neck beneath the jaw should always be thoroughly removed. The probability of their involvement is at least 36 per cent.

We know that X-ray has no effect on metastatic glands in the neck, and we have no data to indicate that radium will be any more effectual. Therefore, granting that X-ray or radium may now and then cure the lesion on the lip, the patient still runs the risk of metastasis to the glands. It is, therefore, a very dangerous treatment to employ X-ray and radium for any operable cancer of the lip.

Of the 18 cases of malignant warts which are not included in the above table, 17 have been cured: 15 of these are five-year cases.

Table Showing the Duration of the Disease in Lesions of the Lower Lip Before Operation:

	Cases
Less than 3 months.....	11
3 to 6 months.....	18
6 to 9 months.....	17
9 to 12 months.....	17
12 to 18 months.....	21
18 months to 2 years.....	7
2 to 3 years.....	29
3 to 5 years.....	18
5 years and over.....	32
Total of cases.....	170

This table shows the necessity of a propaganda of education. In only 11, or 7 per cent of cases, have patients sought advice for the little lesion on the lower lip at the most favorable period — within the first three months of its existence. There is really no necessity for the delay of even three months, because within this period metastasis to glands has taken place in 2 cases, one of which has been cured.

Of these 11 patients, 10, or 91 per cent, are well.

The lesions in these 11 cases were as follows: 3 benign — all well; 2 malignant warts — both cured; 6 fully developed cancers: in 4 of these the glands showed no metastasis, and these patients are well; in 2 the glands showed metastasis: the patient whose glands were removed at the first operation is well;

in the second patient the glands were not removed as they should have been at the first operation, and this patient died of cancer of the glands of the neck.

The per cent of cures, therefore, in the 6 cases of cancer in which the lesion had been present 3 months or less, is 83 per cent as compared with the average of 75 per cent in all cases. The per cent of cures in the 4 cases of cancer without metastasis to the glands is 100 per cent, as compared with 95 per cent in all cases without metastasis to the glands.

Had the glands been removed at the primary operation in this one case, the chances are that the per cent of cures in this group would be 100 per cent.

This gives the facts in a nutshell. Patients with little lesions of the lip who submit to the simple operation at least within three months of noticing the lesion should have 100 per cent chances of a cure, if the surgery is thorough. We have no available evidence that any other method of treatment promises results which can compare with these.

The two factors over which we have control are the duration of the disease and the treatment. It should not be a difficult matter to educate the public to both.

The etiological factors in cancer of the lower lip are: Burns from smoking, wounds from teeth, irritation from carrying nails and other foreign material between the lips, unhealed fever blisters, cracks, and chaps. The little lesion can always be immediately seen and felt. Pain is usually absent. When the lesion is first observed smoking should cease, the teeth should be put in order, the habit of biting the lips or carrying foreign material between them corrected; the little lesion should never be touched with caustics, or picked. If it does not heal within three weeks, it should be excised. This can be done under local anaesthesia without pain or mutilation. The lesion should be excised with a good margin of healthy tissue and subjected to microscopic examination, because it is possible that cancer may have developed, even within one month, although this is very unusual.

If cancer has developed, the glands of the neck must be removed.

When this rule is followed in every case, no one should fear cancer of the lower lip. There will be no mutilation, and even the danger of the operation on the glands in the hands of a competent surgeon is negligible.

**Duval, P.: Preservation of the Upper Branches of the Facial, in the Total Removal of the Parotid for Other Diseases than Cancer** (Conservation des rameaux supérieurs du facial dans l'extirpation totale de la parotide en dehors du cancer). *Rev. de chir.*, 1914, xlix, 132. By Journal de Chirurgie.

The surgeon often performs a limited operation in removing tumors of the parotid gland because of the fear of facial paralysis. It is only the eye complications that are of any real importance, so that if the branches supplying the eye can be avoided the extirpation can be made more radical, and recur-



rence more surely avoided. Duval has succeeded in doing this in two cases.

The facial nerve penetrates the gland, dividing it into two layers, the lower one of which is very thin. The facial should be found at its exit from the skull and the upper (fronto-palpebral) branch followed to the posterior superior angle of the parotid. To do this it is necessary to section the mastoid, and sectioning the posterior belly of the digastric makes it easier to find the nerve and pass behind and below the deep lobe of the gland. The cervicofacial branch is cut at its origin and also some of the lower fibers of the upper branch, only those fibers being spared which control the eye. It is then easy to displace these fibers upward and to draw downward the thin layer of the gland that lies below the nerve. This is seized with forceps and drawn downward and forward with the rest of the gland. J. OKINCZYC.

**Vincent, E.: Treatment of Fractures of the Base of the Skull by Early and Systematic Trephining with Opening of the Dura Mater and Meningeal Drainage** (Du traitement des fractures de la base du crâne par la trépanation précoce et systématique avec ouverture de la dure-mère et drainage méningé). *Rev. méd. d'Alger*. 1913, 1.

By Journal de Chirurgie.

Vincent, who has previously published his ideas as to preventive systematic trephining in fractures of the skull, now reports 15 new cases operated on, only four of which ended in death. With the 8 cases of recovery published previously he now has 23 cases with 4 deaths. The deaths have always followed the traumatism very quickly, being due to cranial dislocation, severe injury to the brain, or contusion of the medulla.

It is impossible to cure all patients who have fracture of the base of the skull; there are injuries to the nervous system that make death inevitable whatever the treatment. There must, therefore, be some mortality; but Vincent's statistics show that where the injury to the brain is not irreparable this treatment brings recovery. The best proof of this is that the patients who survive the first accident do not die miserably as they formerly did after 8 to 10 days from meningo-encephalitis because the operation overcomes hypertension and avoids infection. Leaving out the 4 cases where death was inevitable there remain 9 cases of recovery after trephining. Vincent maintains that this number of successful cases without meningo-encephalitis shows that the rational treatment by early and systematic trephining with meningeal drainage should be continued until statistics are produced to show that fractures of the base of the skull can be cured by simple lumbar puncture or by the expectant treatment. J. DUMONT.

**Tooth, H. H.: The Indications for Surgical Treatment in Intracranial Tumor.** *Practitioner*, Lond., 1914, xcii, 487. By Surg., Gynec. & Obst.

In analyzing 497 cases of brain tumor with a view of determining what the average survival

period was, they were found to fall naturally into those with and those without post-mortem verification. They may be viewed from the standpoint of situation and nature of growth, but all consideration of inaccessible tumors and tumors of the pituitary body have been omitted.

Forebrain tumors offer no serious surgical difficulty as to site, the casualties being common to extensive removal of bone in any part of the cranial cavity. Of 161 forebrain operations, 21.1 per cent died within 30 days, nearly half of these within 24 hours. Of the tumors that may be removed with some degree of assurance that recurrence will not result, are the endotheliomata, simple cysts, gummata, and a few of the gliomata. The endotheliomata are the most favorable, and of 15 cases in the frontal region, 8 made good recoveries, and 6 of them are alive and well to date, 4 to 10 years after, the average survival period being higher than for any other class of new-growth.

Sarcomata and carcinomata are only suitable for a decompression operation, while even tuberculomata cannot be treated surgically without grave risk of tuberculous meningitis. The survival period in the operated gliomata cases averaged only 12.7 months from operation, as compared with those running a natural course from first symptom to death at 10.1 months. Of 37 cases only 4 are known to be alive. The high mortality is due mainly to recurrences, and even though a successful removal undoubtedly affords relief, it must be remembered that the partial removal of an innocent type of glioma may result in a phase of activity very acute and more obviously malignant than the original growth. Decompression and exploration in the forebrain show a mortality even higher than that of the radical treatment, but this result affords no criterion of the value of decompression as compared to the radical operation, as the former have mostly been performed upon the worst cases or have been two-stage operations, the patient not surviving the first stage.

The results of operations on the cerebellum are generally unsatisfactory, the gross mortality being in favor of decompression and against the radical treatment.

The results of surgical treatment of the extra-cerebellar group are disappointing in the extreme. These non-infiltrating, almost innocent tumors should lend themselves most successfully to operation, while the position of the tumor pressing on the medulla renders operative interference imperative. But sudden relief of pressure upon the vital centers is followed by oedema, increased vascularity, and probably hæmorrhage. The most that seems justifiable is to relieve pressure by free craniotomy, followed by decompression after as long an interval as possible.

The conditions which indicate the necessity for immediate relief, whether localization has been made or not, are referable to rise of intracranial pressure, and suggest either a rapid phase of growth



or an internal hydrocephalus. These are: (1) Increasing swelling of the optic disc; (2) the grosser form of optic neuritis, particularly if there is a diminution of visual acuity; (3) increasing drowsiness, slow cerebration, and other mental states; (4) respiratory distress or disturbance of respiratory rhythm; (5) increase in the severity or frequency of convulsions or deepening paralysis; (6) unbearable headache.

It is usual to operate in two or more stages, according to circumstances. The first stage is the craniectomy, with removal of ample bone, or its retention as an osteoplastic flap, suturing of the skin completing the first step. The degree of intracranial pressure may be gauged by the amount of pressure, and an idea of the consistency may be gained by the touch. The site of operation will be determined by the localizing symptoms, but in the absence of these, craniectomy is best performed over the right parietal region. The larger number of fatalities occurred at any time from immediately to 14 days after. Most of them were due to shock, respiratory or heart failure. These dangers are most to be feared in the extracerebellar group, less in the intracerebellar, still less in the frontal and temporal, and least in the central region.

The sequel of the first stage is often marked improvement, dullness and drowsiness rapidly disappearing, headache ceasing, convulsions becoming less frequent, and paralysis even lessening. The best evidence of the lasting relief of pressure is the improved condition of the optic discs, which may vanish in a week. On the other hand, no relief may follow, and it becomes necessary to give further relief by decompression or, in special cases, by radical removal of the tumor.

The second stage implies reopening of the skin-flap and incision of the dura. This is the critical moment in which the decision must be made, whether to leave matters as they are or to attempt removal of the tumor. If visible and highly vascular, its margins ill-defined, its consistency soft, it is almost sure to be a rapidly growing glioma or other malignant tumor, and is best left alone. If it is non-vascular, perhaps cystic, it again may be glioma, but quiescent, and should also be left alone, as removal will surely be followed by malignant activity. If the growth is firm and sharply delimited, it is almost certainly an endothelioma and can be removed with safety. If the tumor can be felt but not seen it indicates a subcortical growth, practically certain to be a glioma, and should not be touched, but it is permissible to tap a gliomatous cyst.

Post-operative shock is generally less frequent after the second stage, and the mortality is proportionately low. Slight sepsis of the flap is a serious danger and septic meningitis claims many. The future course of the case depends upon the behavior of the tumor itself. If it continues to enlarge or recurs, large hernial protrusions result, with perhaps a return of all former symptoms; and the patient lapses into a vegetative existence until death. In

the more favorable cases the patients lead useful lives, with little more than the discomfort of the hernia, for a term of years. E. K. ARMSTRONG.

**Thorburn, W.: Address on the Present Position of Cerebral Surgery.** *Med. Chronicle*, 1914, lix, 1.  
By Surg., Gynec. & Obst.

The author attempts to arrive at some general conclusions as to the final results of surgical interference in epilepsy and cerebral tumors. In considering epilepsy it must be remembered that almost any operation may produce a temporary arrest of symptoms, and one must thus be certain that when a direct attack upon the probable focus of disease appears to have cured it, one is not misled by a mere lull in the symptoms. Cushing's figures on 58 cases are quoted, with 20.7 per cent of recoveries and 52 per cent improved. Rawlings refers to 20 cases, 10 per cent being cured and 70 per cent markedly improved.

The author's series consists of 19 cases which he has followed for at least two years. Of these, 5 are completely cured and 6 greatly improved; or in other words, over a quarter have been successfully operated. The author advises that operation be limited absolutely to traumatic cases with a definite cranial lesion or focal symptoms, as he has never seen any benefit from operation for idiopathic epilepsy. Commonly, adhesions of the dura to the skull or of the cortex to the dura are found, sometimes bony spiculæ, an osteitis, or cysts. He has never had any trouble with the cranial defect and never had to use any artificial covering.

Four hundred and ninety cases of cerebral tumor are tabulated, and from these figures it may be assumed that operation was of little or no value or may have hastened the end in 37.9 per cent, while it has probably saved or greatly prolonged life in 23.6 per cent. In 38.3 per cent its value was doubtful. While a cure of less than 25 per cent is not very encouraging, it must be remembered that the great majority of cerebral tumors are malignant, and thus we are driven to the position that with our present resources cerebral surgery has to aim not so much at the cure of malignant disease as to the prolongation of life, the prevention of blindness and of intense headache. As in the case of epilepsy, mere exposure of the cerebral cortex is almost free from risk, whereas, deep operations upon the brain substance become very fatal, the dangers of exploration being as great when the growth is not found. Early decompression is advised in every case of cerebral tumor, while anything else that may be done must be left to the opportunities of the moment in favorable cases. E. K. ARMSTRONG.

**Froment: Cerebral Surgery and Recent Discussions on Aphasia** (La chirurgie cérébrale et les discussions récentes sur l'aphasie). *Lyon méd.*, 1914, cxxii, 663.  
By Journal de Chirurgie.

Before the work of Marie and the discussions before the Neurological Society (1908) it was held



that the language zone was on the left side in right-handed people and that it occupied all the convolutions around the fissure of Sylvius except the foot of the frontal and the ascending parietal, and that it comprised two parts: the posterior one, Wernicke's zone, was the center of verbal deafness—first temporal—and of verbal blindness; the anterior one, composed practically of the foot of the third frontal, was Broca's language center. In pathology, sensory aphasia was held to be due to a lesion of Wernicke's zone, and motor aphasia to a lesion of Broca's center.

Total aphasia implied destruction of all the language zone. Marie and Montier agree that sensory aphasia is really due to a lesion of Wernicke's zone; but they hold that motor aphasia cannot be considered a lesion of the third frontal. They do not believe that the language center as described by Broca exists. Motor aphasia results from a lesion of the lenticular zone, a region comprising the lenticular nucleus and the convolutions of the island. The lenticular nucleus is a center of coordination; motor aphasia is a lack of coordination. However, the difference in the two anatomical conceptions does not make any great difference in the surgical procedure.

Froment gives the following rule for surgeons: Motor aphasia which affects the spoken and written word is due to a lesion situated more anteriorly than that for sensory aphasia. In a patient with aphasia a trephine should be made in the region corresponding to the island, more especially its anterior extremity. The opening can then be prolonged forward or backward depending on the lesions found.

G. COTTE.

**Lawroff, W.: Repairing Defects in the Dura by Transplantation of Fascia** (Zur Frage des Ersatzes von Duradefekten durch Transplantation von Fascie). *Beitr. z. klin. Chir.*, 1914, lxxxix, 466. By *Journal de Chirurgie*.

In 1913, Kirschner described 46 cases in which a defect in the dura was covered with transplanted fascia; the author adds 23 more cases from the literature and 4 new cases from the Obuchow Hospital at St. Petersburg. In 2 of these cases the brain symptoms appeared a long time after the skull fracture. In one case they were caused by a splinter of bone, in the other by adhesions between the surface of the brain and the skin, which followed an earlier operation for brain abscess. In both cases the defect was covered by fascia—fascia lata and fascia from the back. In both cases after the operation there were no further brain symptoms.

In the two other cases the skull fractures were recent. In the first case the brain substance had prolapsed; the defect in the dura was covered with fascia. No attacks followed the operation. In the second case there was also prolapse of the brain. The dura defect was covered with fascia. Five days after the operation epileptoid attacks occurred, and as a hæmatoma was discovered under the trans-

planted fascia it was removed. For a while there were no more attacks, but three and one-half months later the patient appeared again, as the attacks had recurred.

The course of this latter case caused the author to give up the use of fascia for covering defects in the dura in fresh fractures of the skull. From the published cases as well as from extensive experimental work, the author expresses the belief that fascia is an excellent material for covering defects in the dura; the fascia takes well and without reaction, closes the subdural space hermetically and hinders not only the entrance of infective material from without, but the escape of brain substance. It also prevents hernia of the brain. But adhesions between the transplanted fascia and the brain substance are not always avoided. The formation of these adhesions is often explained by injuries to the brain during the operation, but adhesions are sometimes formed when there has been no injury to the brain whatever.

VON HOLST.

**Diller, T. and Miller, R. T.: The Successful Removal of a Tumor from the Frontal Region of the Brain.** *Am. J. M. Sc.*, 1914, cxlvii, 550.

By *Surg., Gynec. & Obst.*

The first symptoms of the case were twitching movements in the epigastric region. After a time these also appeared in the left hand and arm; later the arm and left leg became weak. The picture was that of pure Jacksonian epilepsy in an otherwise healthy woman of 53 years.

The operation was accomplished in two stages. At the first operation the tumor was located just anterior to the upper portion of the motor cortex and extended up to the mid-longitudinal sulcus, but on account of shock from loss of blood a closure was made. At a subsequent operation a few days later a tumor measuring 4.5 x 3.5 x 3 cm. was enucleated.

The tumor was encapsulated and was diagnosed as a hæmangio-endothelioma.

Following the second operation the patient was paralyzed in the left arm, face, and leg. From this, she subsequently recovered and both arms and legs rapidly became stronger.

EUGENE CARY.

**Walther, M.: Dermoid Cyst of the Inion** (Kyste dermoïde de l'inion). *Bull. de l'Acad. de méd.*, 1914, lxxi, 335. By *Journal de Chirurgie*.

Walther has operated on two dermoid cysts of the inion. The first case was published in 1895 after having been presented before the Surgical Congress in 1893. A man of 34 had a fistula at the occipital protuberance, following the removal of an extracranial cyst. This fistula penetrated the skull and opened into a large intracranial cavity. The author made an extensive resection of the occipital bone and exposed the entire intracranial cavity, which was dermoid in character. He could not dissect the wall of the cyst, which was very thin. It has been 21 years since the operation and the patient has never had any cerebral symptoms.



The second case, not previously published, was in a child of three. It had an ulcer a centimeter in diameter at theinion, following the incision of a swelling which appeared to be a cold abscess. Below the orifice there was a deep swelling which extended under the upper insertions of the muscles of the nape of the neck. Upon operation, after the fistula and the adjacent cavity were curetted it was found that this cavity communicated through a tolerably large opening with another intracranial cavity. A granular mass was dissected the size of a small nut made up of small lobulated tumors with grayish contents and fibrous nodules, which was located at the upper insertion of the muscles of the nape of the neck. An extensive resection of the occiput was then made, exposing the intracranial pocket, which was located superficially between the cerebellum and the occipital bone. The cavity was lined with a very thin smooth membrane which it was impossible to separate from the dura mater. Healing took place by second intention. Histological examination showed that the wall was dermoid in nature but without either hairs or glands. The extracranial tumor was made up of fibrous masses which had undergone angiomatous change in places. The patient when seen again thirteen years later showed a smooth, slightly depressed scar. Touching it caused a disagreeable sensation with irradiation to the thorax and a sensation of nausea.

These two cases seem to confirm Lannelongue's theory of inclusion. The immediate and late results in these two cases show that it is possible to limit operation to extensive resection of the bony wall of the cystic cavity, leaving open the dermoid pocket, the edges of which unite with the cutaneous scar.

CHIFOLIAU.

**Camus, J. and Roussy, G.: Hypophysectomy and Experimental Glycosuria** (Hypophysectomie et glycosurie expérimentales). *Compt. rend. Soc. de biol.*, Par., 1914, lxxvi, 299. By *Journal de Chirurgie*.

In a preceding note the authors made an experimental study of polyuria and polydipsia appearing after operations on the hypophysis. In this note they take up the question of glycosuria under the same conditions. They made a systematic study of the sugar in the urine of dogs before and after operation in which there were lesions or destruction of the hypophysis or the neighboring part of the brain. Their results were as follows: Absence of glycosuria in 30 cases of lesions or destruction of the hypophysis; absence of glycosuria also in 9 cases of lesions of the base of the brain in the region of the hypophysis; positive glycosuria in 6 cases of lesion or destruction of the hypophysis or neighboring parts of the brain. This shows that glycosuria is an unusual phenomenon after operation on the hypophysis or neighboring parts, as there were only 6 positive cases out of 45. Moreover, it is only temporary. Glycosuria is not always associated with polyuria, which is more constant.

The authors believe that glycosuria after hypo-

physectomy is only a chance incident, like other post-operative glycosurias. It seems to depend less on partial or total suppression of the hypophysis than on injury of the nervous centers of the region, as is shown by the group of four positive cases out of six where there was a lesion at the base of the brain sufficient to provoke glycosuria. PIERRE CRUET.

### NECK

**Barr, J.: On the Functions of the Thyroid, the Suprarenal, and the Pituitary Glands.** *Practitioner*, Lond., 1914, xcii, 457.

By Surg., Gynec. & Obst.

As a result of the attention bestowed upon the ductless glands there are now some potent and extremely useful remedies, but a clear conception of the suitability of thyroid, suprarenal, and pituitary extracts should be had before they are used.

Thyroid inadequacy was designated by Ord as myxedema. It is about seven times more common in women than men, probably because overaction, which is so common in females, is apt to be followed by lessened function. In males the thyroid is less active, but the pituitary and suprarenal glands are much more so; hence the blood-pressure is higher, there is more retention of calcium salts, and arteriosclerosis occurs earlier. Thyroid has proved of value in the incontinence of urine in children, in the troublesome micturition of the aged, in mastodynia, and in cases of large prostate. Thyroid is of importance whenever one wishes to increase calcium metabolism; hence its value in arteriosclerosis and hyperplastic conditions.

There are an enormous number of cases of hyperthyroidism without exophthalmos, enlargement of the gland, or marked nervous symptoms; but one may observe emotional and vasomotor disturbances, a warm, moist skin, active capillary circulation, high venous pressure, rapid heart action, increased reflexes, and even a slight muscular tremor. The urine may contain albumin and is associated with a lessened amount of fixed lime in the blood. In many cases there is an accompanying diminished action of the suprarenals with skin pigmentation and low blood-pressure. This increases the gravity, though the symptoms are not more marked, there being less cardiac stimulation and less palpitation. In hyperthyroidism there is a great difference between the systolic and diastolic pressures, which means an inefficient circulation, and it is for this reason that suprarenal extract plays such an important part. Barr believes that the soluble salts of calcium, combined with adrenalin, constitute the best remedy for this disease. Suprarenal and pituitary secretions help retain the lime salts in the tissues, but the latter should only be used when the blood-pressure is low and one believes the suprarenals to be inactive. As the improvement advances there may be found too much lime in the blood and tissues, with a slow, irregular heart action. In that case, intake should be lessened and elimination hastened with citric acid.



Antithyroid serum, thyrodoctin and rodagen are all very expensive remedies, and the author has not been favorably impressed with their value. Belladonna, digitalis, and the X-rays have occasionally been found useful.

The injection of adrenalin solution, 1:1000, into the pleural cavity prevents the reaccumulation of fluid after tapping, but it also favors the formation of adhesions. The author prevents this by injecting filtered air and paraffin. This permits the whole of the fluid to be drawn off without discomfort and prevents the rapid spread of mischief in tuberculous pleurisy. Though the secretions of the suprarenal and pituitary glands cannot be regulated, the high-pressure effects which they produce can be controlled; and furthermore, the secretion of the thyroid gland can be stimulated or decreased by their use.

In the majority of cases Addison's disease is due to caseation of tuberculous origin which is not amenable to tuberculin treatment. The administration of adrenalin is of very little use in this condition, as it is readily oxidized and cannot be universally distributed to all the sympathetic nerves. To get a widely distributed effect it is best given very dilute with a large quantity of hypertonic sodium and calcium chloride solution.

Excessive activity of the anterior lobe of the pituitary gland results in gigantism if occurring in early life. Later in life it results in acromegaly. This excess function is associated with increased sexuality in the male and amenorrhœa in the female. Excessive action of the infundibular leads to increased metabolism and carbohydrate intolerance. The extract of this portion of the gland has a marvelous effect in producing contraction of the intestine and uterus, and thus is very useful in paresis of the bowel and in the so-called saprœmia following parturition, in the latter shutting out further absorption. In diphtheria a combination of pituitary extract, adrenalin, and a calcium salt is useful in rectifying low blood-pressure and dilated heart; neurasthenia with dilated stomach and cold extremities is often benefited.

Defective action of the anterior lobe is associated with infantilism, and if there is an associated hypothyroidism, there may be also a cretinoid condition. Infundibular insufficiency is accompanied by great carbohydrate tolerance and low blood-pressure, associated with such conditions as dystrophia adiposis genitalia, or adiposis dolorosa. Treatment of these cases is easily regulated by observation of the blood-pressure and by the freedom of the urine from sugar.

E. K. ARMSTRONG.

## SURGERY OF THE CHEST

### CHEST WALL AND BREAST

**Quénu, E.: Early Involvement of the Glands in Cancer of the Breast** (De l'adénopathie précoce dans le cancer du sein). *Bull. med.*, 1913, xxvii, 1039. By Journal de Chirurgie.

The axillary glands into which the lymphatics of the breast flow are invaded in cancer of the breast by colonies of cells from the mammary tumor. Surgeons have been trying for a long time to settle the question of the time at which this invasion takes place. As early as 1888, Delbet found from a study of the statistics and his own cases that in general the involvement of the glands is very early and that it exists before it is clinically demonstrable.

In the present article Quénu shows by two of his own cases that involvement of the glands may precede the initial nodule of the breast; that is, that the glands may be easily palpable while the mammary nodule is still so small and insignificant as to escape detection or at least be doubtful. Clinically, the glandular involvement comes first, while the mammary lesion remains uncertain. Thus involvement of the glands of the axilla is not only early, but it is the sign which reveals mammary cancer.

The practical conclusion to be drawn is that an affection of the axillary glands, hard in consistency, should be an object of suspicion if it is observed at about the age of 45 and if nothing in the general condition or the neighboring tissues gives a satis-

factory explanation of it. The same course should be taken as in a doubtful cancer of the breast; uncertainty is not permissible.

J. DUMONT.

**Nathan, M.: Early Diagnosis of a Neoplasm of the Breast by the Histological Examination of the Hæmorrhagic Discharge** (Diagnostic précoce d'un néoplasme du sein par l'examen histologique de son suintement hémorrhagique). *Clinique*, 1914, 38. By Journal de Chirurgie.

Mintz recently called attention to certain neoplasms of the breast, the symptoms of which were limited for years to a bloody discharge from the nipple. Nathan recently had a case of this kind and he was able to make the diagnosis by the histological examination of the discharge.

A woman 40 years old, apparently healthy, had complained for several months of a bloody discharge from the left nipple. She had nursed several children, the last one 15 years before, but an abundant milk secretion had kept up since that time. By pressure on a certain point on the breast a brownish liquid was discharged, resembling in color the hæmorrhagic effusion in cancer of the pleura. Examination of the nipple and palpation of the breast did not show any tumor. The axilla was free of glands. In spite of the negative symptoms the most probable diagnosis seemed to be cancer of the breast. Microscopic examination of the fluid confirmed this diagnosis, showing the presence of



abundant large and small polymorphous cells, isolated or in groups. There was no doubt of their neoplastic origin.

These early bloody discharges are characteristic of intracanalicular papillary epitheliomas; their point of origin seems to be the galactophorous ducts.

The above case presents the unique point of having originated in a gland with abnormally prolonged activity. The theory of cellular metaplasia is supported by this fact. The practical conclusion to be drawn from the case is the possibility of early cytodiagnosis.

J. DUMONT.

**Mercadé, S.: Tuberculosis of the Costal Cartilages**  
(Tuberculose des cartilages costaux). *J. de chir.*,  
1914, xii, 159. By Surg., Gynec. & Obst.

It has been generally held that tubercular abscesses of the wall of the thorax originate in the bone; that there was no such thing as primary tuberculosis of the cartilages. Mercadé reports six cases in which there were tuberculous abscesses originating in the costal cartilages. The patients were men between 35 and 60 and one woman of 25. The abscess did not develop downward but worked forward through the interstices between the muscle fibers.

The cases were successfully operated on by the following technique:

1. In the first step it is absolutely necessary that the whole extent of the lesions be exposed, therefore a skin flap should be traced large enough to take in the whole affected area. The point of origin of the lesion should be determined by pain on pressure. This should be the base of the flap. The incision should be begun in healthy skin and carried around the abscess 2 or 3 cm. from it and come up on the other side parallel to the first line. If instead of an abscess there is a fistula, its direction should be determined by a sound and the flap traced around it, with the base perpendicular to its point of origin. If it becomes necessary to enlarge the flap the incision can be prolonged. The flap should then be dissected. In doing this, two things should be avoided — opening the abscess and perforating the skin. If the skin is adherent to the wall of the abscess it is better to open the abscess, protecting the neighboring tissues, and leaving the fragment adherent to the skin, rather than to perforate the skin in the attempt to dissect it or thin it to such an extent that it will be perforated by gangrene later. The dissection should be continued beyond the adherent zone which should be curetted energetically and cauterized with zinc chloride. When the flap is completely dissected it should be turned back on its base and covered with sterile dressings.

2. The second step consists of extirpation of the pocket of the abscess or fistula. In opening the abscess every precaution should be taken to protect the neighboring parts. It is best to open it with a large trocar and dry the pocket with compresses. The abscess should then be followed up until the original lesion is discovered. If it is a fistula a

sound in its lumen should guide the dissection. If the skin flap is not extensive enough it should be uncovered and the lateral incisions prolonged as far as necessary, and the flap dissected farther with the same care as before.

3. The third step is resection of the cartilage. The lesion having been found the cartilage should be incised with a bistoury from before backward at a distance of 1 or 2 cm. on each side of it. When the fragment is separated it should be lifted carefully with the fingers, not with forceps which might crush the cartilage and injure the pleura. If several cartilages are affected they should be removed separately, sparing the costal arch; but if the costal arch is itself involved it should be removed, the piece to be removed being separated with the bistoury in each case before it is lifted up from the underlying tissues. The underlying tissues should be examined carefully and any suspected point removed, even if it is pleura. If the pleura is opened by design or accident, the thorax should be compressed above the point and the pleura sutured with catgut.

4. Closure and drainage of the wound comprises the fourth step. A drain should be left for two days, either at the angle of the incision or through an orifice made in the flap. Care must be taken to avoid a dead space in closing the wound. It is generally sufficient after having sutured the skin to apply a tampon of gauze which will exert sufficient pressure to produce the desired result. If necessary a few sutures may fix the skin flap to the floor of the wound. They must be applied with care, remembering the nearness of the pleura.

If the abscess is in the abdominal wall, especially under the rectus, which is the place to which it migrates most frequently, it is necessary to section the muscle.

After the operation, if the operation requires the cutting into bone tissue, there will be a discharge first of blood and then of serous fluid. After the removal of the drain the dressing should be examined every two days to see if there is a discharge. If there is, the lips of the flap can be separated a little between two sutures and the fluid squeezed out and the wound redressed. This is seldom required more than once or twice at most.

A. Goss.

**Potel: Sarcoma of the Scapula; Partial Resection of the Scapula with Preservation of the Shoulder-Joint; Good Functional Result Two and One-Half Years after the Operation** (Sarcome de l'omoplate; résection économique de l'omoplate avec conservation de l'articulation de l'épaule; bon résultat fonctionnel deux ans et demi après l'intervention). *Bull. et mèm. soc. de chir., Par.*, 1913, xxxix, 1588. By Journal de Chirurgie.

The case reported was a sarcoma with fusiform cells about 7 cm. in diameter that had involved almost the whole scapula and the attached muscles and which Potel, contrary to the usual practice, treated by partial scapulectomy, sparing the whole shoulder-joint. This course seems to have been justified by the results, for at present—two and



one-half years after the operation—the patient has had no recurrence and has complete movement of the arm.

QUÉNU believes in preserving the glenoid fossa, and if this is impossible, he thinks it best to fix the head of the humerus at the external end of the clavicle.

BROCA performed extensive resection for a myeloplaxoma of the spine of the scapula. These tumors can be differentiated from the osteosarcoma by their clinical course as well as by the radiographic picture. They develop slowly and in the radiographic picture are easily distinguished from the bone and neighboring soft parts by their uniform gray color. They should be simply excised when the region permits; otherwise they should be curetted out without its being necessary to fill up the cavity or perform a bone-graft, as Delbet, Walther, and others have advised.

WALTHER said that in a case of resection of the radius for myeloplaxoma with bone-graft, recovery had been greatly hastened by the graft. As to small cell sarcoma he had only seen one case of recovery after partial resection, a case in the alveolar border of the jaw, where in spite of the limited resection there had been no recurrence more than two years after the operation.

DELBET finds that filling up the cavity left by the removal of bone has considerable advantage. These cavities are painful to the patient, they suppurate, every dressing is torture, and they have to be dressed often. After they are filled they only need to be dressed rarely and the patients no longer suffer.

SAVARIAUD agrees with Delbet that it is much preferable to fill the cavities. J. DUMONT.

**Hirano, T.: Transplantation of Fascia to Cover Defects in the Wall of the Thorax** (Die freie Fascientransplantation zur Deckung von Thoraxwanddefekten). *Beitr. z. klin. Chir.*, 1913, lxxxvii, 238. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author describes experimental attempts to replace defects in the wall of the thorax in such a way as to give sufficient firmness to prevent hernia of the lung and to avoid adhesions of its surface.

Transplanted fascia lata was used in rabbits and dogs. In order to prevent adhesions of the surface of the lung to the transplant, a partial pneumothorax was left or induced by the introduction of nitrogen. Fifteen experiments were made. In 8 of them there was infection, but in spite of that fact the transplant took; in the 7 aseptic cases the fascia lived in the histological sense. There was complete lack of lung adhesions in 3 aseptic cases and 1 infected rabbit case, and only slight adhesion in 1 infected and 2 aseptic cases in rabbits. There were broad superficial adhesions in two aseptic cases in dogs.

The pleural endothelium had covered the internal surface of the transplant in a specimen 7 days old, and in a specimen 154 days old there was almost normal pleura formation.

In this method, therefore, adhesions of the lung can be avoided if the course is aseptic and if by penumothorax the surface of the lung is kept from coming in contact with the transplant till the pleural endothelium has covered its internal surface.

HELLER.

**Lenormant, C.: Chondrectomy to Mobilize the Chest Wall in Deformity of the Thorax** (La chondrectomie mobilisatrice dans les déformations thoraciques accompagnées de troubles respiratoires). *J. de chir.*, 1914, xii, 145.

By Surg., Gynec. & Obst.

Freund believed that in tuberculosis and emphysema of the lungs the deformity of the thorax is often the cause, rather than the result, of the pulmonary disease, and therefore recommended resection of the costal cartilages in the treatment. This has not proved practicable in tuberculosis, because it is of no benefit except in such an early stage that medical treatment is effective; in emphysema, however, the operation has been performed about a hundred times with excellent results.

There are other deformities of the thorax, however, in which Lenormant believes the operation would be effective, such as those of scoliosis, rickets, ankylosis of the vertebræ, and in the rather unusual congenital funnel-shaped chest when it is so marked as to cause displacement of the heart and difficulty in respiration. He cites only four cases in which the operation has been performed for these reasons. In two of the cases there was pigeon breast as the result of rickets with considerable shortening of the transverse diameter, and both patients had typical asthmatic attacks with more or less disturbance of respiration during the intervals; one patient had a congenital funnel-shaped thorax with shortening of the antero-posterior diameter, and one was a case of ankylosis of the vertebræ, with flattening of the thorax. The two latter suffered from continual dyspnoea without any paroxysmal attacks. In all of them the thorax was so rigid that respiration took place only by the movements of the diaphragm.

The technique of resecting the costal cartilages is so simple that it does not need description. The only question seems to be as to how many should be resected and whether the operation should be unilateral or bilateral. The author believes the resection should be extensive, and contrasts the partial success in Meyer's case, who resected only two cartilages, with the brilliant results in Klapp's case, where the cartilages from the second to the eighth inclusive on both sides were resected. In all the cases the immediate results were satisfactory; mobility of the ribs became apparent on the operating table and there was improvement in respiration and disappearance or decrease in the dyspnoea.

The late results in Meyer's case are not known; in Klapp's they were excellent six months after the operations, and in the other two there was great permanent improvement in the general condition, but the attacks of asthma continued, though they



were not so frequent nor so severe as before. One of these cases was operated on a second time, a pseudarthrosis being established at the sternum, with marked improvement. The chief danger in the late results of the operation is the regeneration of the cartilages. In the author's own case this took place in spite of the removal of the perichondrium and interposing muscle. The best means to prevent this is to keep up respiratory gymnastic exercises, and this is an essential part of the treatment. Supplemented in this way the author believes chondrectomy is of great value in deformed and rigid thorax.

A. GOSS.

**Leriche: Emphysema Treated by Freund's Operation** (*Emphysème traité par l'opération de Freund*). *Lyon. med.*, cxxii, No. 1, 28.

By Journal de Chirurgie.

Leriche describes a case of emphysema with a dilated rigid chest in which Freund's operation was unsuccessful, and discusses the causes of this failure. The patient was a man of 62 who had had emphysema for a long time. Leriche resected the third, fourth, fifth, and sixth costal cartilages, but from an error in counting the second was spared, and it sufficed to keep the thorax as rigid as before. It is evident that this cartilage should also be resected which will probably produce the desired result. The interesting point is that in performing Freund's operation the cartilages must be resected until the one is found that is the key to the thorax; as soon as it is resected the thoracic wall is mobilized. It is not always the same: in this case and another operated upon by Leriche it was the second which seemed to control the ankylosis. In a third case it was the third and fourth.

G. COTTE.

**Uffreduzzi, O.: Experimental Surgery of the Organs of the Mediastinum, Except the Heart** (*Contribution à la chirurgie expérimentale des organes du médiastin, le cœur excepté*). *Polclin.*, Roma, 1914, xxi, 3.

By Journal de Chirurgie

In spite of the brevity of this paper it is difficult to give a brief abstract of it, because of the abundance of experimental facts that it contains. These experiments aim to demonstrate the lack of danger in intratracheal insufflation anæsthesia by Meltzer-Auer's method, and its advantages in numerous operations on the organs of the mediastinum. The author used Giordano's apparatus and his experiments were performed on more than 300 dogs, with no death due to the anæsthesia, although some of the operations lasted more than two hours. These experimental operations clear up some points in human surgery and will serve as a basis for further research.

In collaboration with Giordano, Uffreduzzi has modified Roux' technique for œsophago-intestinal anastomosis in case of stenosis of the œsophagus.

The first stage is a lateral laparotomy; the jejunum is sectioned 40 cm. below the duodenojejunal angle; the distal end of the intestine is brought for-

ward and sutured to the proximal segment about 60 cm. below the point of section. The trunk of the jejunum is introduced under the skin of the thorax. Through its orifice the animal may be nourished, excluding the stomach.

The second stage consists of another laparotomy and the opening of the intestine into the stomach. The two organs are already adherent or are placed in contact in the most favorable position. After that the food may pass through the stomach, or may be forced to pass, if wished, by obliterating the jejunum below the gastro-enterostomy. Only the anastomosis of the œsophagus with the jejunum remains. He operates by the thoracic route and performs an end-to-end anastomosis in the open mediastinum. The suture in two stages holds well; the vitality of the segment of intestine is preserved, provided it is not carried up further than a third of the thorax. This complex operation is preferable to that of Roux; there is less danger and difficulty and it is applicable even in cases of tumor of the œsophagus. The new œsophagus is in a better position to functionate because of the lack of sutures. Its chief indication is in tumors of the œsophagus situated low down.

The author then tried replacing a resected segment of the œsophagus by a sort of tube obtained by rolling up a parallelogram cut from the wall of the stomach and left adherent at its base in the lesser curvature. The tube is carried into the thorax and brought into contact with the upper end of the œsophagus to which it is sutured. A number of experiments were performed on the descending aorta in collaboration with Giordano. They found that hæmostasis of this vessel by compression could be maintained for 12 minutes without any harm; and for 15 with only inconsequential symptoms. Arrest of the blood for as long as 20 minutes was fatal; but the most complex operation on the aorta can be performed in 12 to 14 minutes. For the end-to-end anastomosis of vessels after the resection of a segment they have devised a method superior to Carrel's, as it produces a tighter suture. The two ends are united at a point on the posterior side of the vessel and inside. One of the ends of the suture is used as a continuous suture half-way round the vessel; then they return to the original point, take up the other end of the suture and suture the other half, until the first one is met. This requires only 8 to 10 minutes; the suture is absolutely water-tight and does not cause stenosis. Experiments on the thoracic duct were performed with Rinaldi. They were struck by the seriousness of lesions of this duct; they are fatal in half the cases, so ligation below the lesion is recommended. It is easy to find the duct by the thoracic route some hours after an abundant meal. It is very fragile, but may be ligated without injury of any sort. Collateral circulation is established from the lymphatic network surrounding the duct. If it is easier the duct may be ligated, not at the point of section, but further up at the most accessible point. When the



collateral circulation is established, which takes some time, the wound has already cicatrized.

The pulmonary artery was utilized to perfect the technique of Trendelenburg's operation. This operation has never given any definite cures, but it is logical and worth while to establish the conditions under which it may be performed. A simple intercostal incision in the third space suffices to expose the pericardium and the intrapericardial course of the aorta and the pulmonary artery. The circulation in these vessels may be interrupted by means of a rubber tube for thirty minutes without any injury, a time long enough to open the pulmonary artery, extract clots, and close it up again. Uffreduzzi uses a special fenestrated forceps by which it is possible to suture the edges of the vessel wound while allowing the blood to circulate. But he prefers a transverse to a longitudinal incision, as it renders exploration easier and more rapid.

There is little to be said of the superior and inferior vena cavæ. It is known that it is always fatal to ligate them. The higher up the ligation of the inferior vena cava is, the sooner death ensues. It is certain that suppression of renal or hepatic function is incompatible with life, but death in such cases comes on too quickly to be attributed to anything other than a mechanical cause; the blood that flows into the heart is insufficient to produce mechanical functioning of the heart. The details furnished by intrathoracic section of the vagus nerves are less interesting. Without passing judgment on Franke's operation, Uffreduzzi maintains that the intrathoracic route gives the best access to the intercostal nerves, but he says he has never located the spinal ganglion by this route with certainty.

PIERRE FREDET.

### TRACHEA AND LUNGS

**Graser: Surgery of the Lungs and Pleura** (Erfahrungen über Chirurgie der Lunge und Pleura). *Beitr. z. klin. Chir.*, 1914, lxxxviii, 671.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

This work describes a series of clinically interesting cases of surgery of the chest, which serve as a basis for a general discussion of this field of surgery which is still in process of development.

1. In the treatment of empyema, rib resection with rapid, thorough emptying out of the pus is the operation of choice; the after-treatment consists of frequent forced respiratory exercises. In putrid empyema good results are obtained by disinfection with a solution of collargol, then filling the cavity with concentrated carbolic acid, irrigation with alcohol, and filling with bismuth paste (1 case). In chronic empyema Perthes' suction drainage was often unsuccessful. Extensive plastic operations had to be undertaken. In one case, of which the history is given, these operations had to be repeated frequently, and combined with pneumolysis and plastic operation with flaps.

2. An unusual case was that of a one-year-old

child, in which, after a croupous pneumonia, a pyopneumothorax developed, for which no explanation could be found.

3. A case of putrid abscess of the lung was first treated in vain by artificial pneumothorax, and finally cured by extensive rib resection, disinfection of the large cavity and filling it with bismuth paste. Another case of abscess of the lung, which was treated by insufflation of nitrogen into the pleural cavity, showed temporary improvement, but finally death resulted from embolism of the lung.

4. In a case of tubercular pyopneumothorax, an extrapleural plastic operation was done on the thorax without effect. A peculiar method of determining the seat of the lung fistula is described in the article.

5. In the treatment of bronchiectasis, opening and external drainage did not give very satisfactory results (4 cases). Better results were obtained by extrapleural plastic operation. TIEGEL.

### HEART AND VASCULAR SYSTEM

**Aulong and Boudol: Immediate and Late Results of a Suture of the Heart** (Résultats immédiats et éloignés d'une suture du cœur). *Presse méd.*, 1913, xxi, 1027. By Journal de Chirurgie.

The authors report a case of injury of the right auricle caused by a sharp instrument. The signs of injury of the heart—pallor, anguish, threadlike pulse, distant and dull heart sounds—were very clear. Operation was performed a half-hour after the accident, through an osteocutaneous flap. The pericardium, which was full of clots, was emptied. The right auricle presented a transverse wound 1 cm. long, which was sutured with two catgut sutures. No drainage was used. The wall was sutured. Recovery was complicated by a left pleural effusion which was absorbed spontaneously in a month. There was complete recovery in six weeks. When discharged, there was no alteration in the cardiac rhythm; auscultation of the left lung showed only a little obscurity in the breath sounds.

A year later the patient was called upon for military service and was able to pass the physical examination. During his two years of service he had no indisposition due to his cardiac lesion. The heart functioned normally with almost complete anatomical integrity. The only abnormality was a slight cardiac hypertrophy accompanied by a little cardiovascular erethism, exaggeration of the apex beat, and the relative dullness of a slightly hypertrophied heart, these signs being corroborated by pulse tracings and radiographic examination.

J. DUMONT.

**Weil, Leriche, and Mouriquand: Brauer's Operation in a Case of Uncontrollable Asystole in a Child** (Opération de Brauer dans un cas d'asystolie irréductible chez l'enfant). *Lyon méd.*, 1914, cxxii, 246. By Journal de Chirurgie.

The case was in a child of 14 with a mitral lesion due to rheumatism. There had been asystole for

two weeks which resisted all medical treatment. Operation was performed under ether and was well borne. At the end of a week there was considerable improvement, but soon the child had another attack of rheumatism and died a few days later with complete asystole. Autopsy was not performed but it is practically certain that the aggravation was due to a new attack of rheumatic endocarditis. Whatever the reason, there was not the rapid improvement in the first few days after the operation that is generally obtained.

Another case was that of a carpenter of 45 treated for a double serofibrinous tubercular pleurisy. During convalescence signs of asystole appeared. As medical treatment failed cardiolytic was performed. The result was excellent and at present, two and a half years later, the patient is working at his trade 10 hours a day. The improvement persists although there is extensive ossification of the region operated on.

G. COTTE.

**Gardère, P. C. and Arnaud: Brauer's Operation in a Case of Tubercular Adhesions of the Pericardium** (Opération de Brauer dans un cas de symphyse tuberculeuse du péricarde). *Lyon méd.*, 1914, cxxii, 195. By *Journal de Chirurgie*.

From the discussion on Brauer's operation it seems that, although it is difficult to define its mode of action, it is the best treatment in adhesions of the pericardium and mediastinitis when they cause asystole; but in asystole due to cardiac lesions the results are less satisfactory. A case operated upon by Armand was a woman of 42 who had a left pleurisy and then a right pleurisy in October, 1912. In January, 1913, symptoms of adhesion appeared. From January to July she had thoracentesis performed 11 times and abdominal paracentesis 6 times, 39 liters of fluid being removed. An operation was performed without anaesthesia and was well borne. She improved for a time, but later relapsed and died in January, 1914. G. COTTE.

## SURGERY OF THE ABDOMEN

### ABDOMINAL WALL AND PERITONEUM

**Dandy, W. E. and Rowntree, L. G.: Peritoneal and Pleural Absorption with Reference to Postural Treatment.** *Ann. Surg.*, Phila., 1914, lix, 587. By *Surg., Gynec. & Obst.*

The authors review briefly the postural treatments which have been used, giving the reasons advocated by the various authors for advocating the methods, after which they enter a discussion of experimental work of their own to determine the manner and rapidity of absorption from peritoneal and pleural cavities, and the value of various postural methods. The basis of postural methods of treating peritonitis was Von Recklinghausen's claims (1863) of open stomata, which established direct communication between the peritoneal cavity and the lymphatic system, thus affording a rapid absorption of peritoneal fluids. These stomata were thought to be limited to the central tendon of the diaphragm. Kallosow, Muscatello, and MacCallum have proved the stomata to be artefacts. Muscatello, however, maintained that an intraperitoneal current carried the fluid to the central tendon of the diaphragm; this latter he considered the exclusive absorbing area of the peritoneal cavity.

Clark, in 1897, advocated elevating the foot of the bed 20 degrees in the treatment of peritonitis, arguing that gravity would hasten the current and increase absorption. Clark himself no longer uses this method.

Fowler, in 1900, advocated the sitting posture in treatment of peritonitis, thereby hoping to retard the intraperitoneal current and thereby favor the accumulation of fluid in the pelvis where absorption was considered minimal.

Coffey has advocated a combined lateral and head-

up position. Küster utilizes the ventral position.

Experimental work by Starling and Tuby (1894) proved that absorption was into the blood-stream and not into the lymphatics. Mendel (1898) and the authors are in accord with Starling and Tuby.

Dandy and Rowntree, after injecting phenolsulphonephthalein into the peritoneal cavity, recovered it from the blood in 2 to 4 minutes; from the urine in 4 to 6 minutes, and from the lymph (thoracic duct) in 20 to 60 minutes. In one hour, 40 to 60 per cent was recovered from the urine; only 0.1 per cent was recovered from lymph in one hour. This is true irrespective of the position of the animal following the injection. Absorption is almost entirely by the blood.

The results of experiments to determine the effect of posture on the rapidity of absorption from the peritoneal cavity is as follows:

1. Active absorption in all postures.
2. The absorption in head-down position is the same as in ventral and dorsal positions.
3. The absorption in the pelvis-down position is 15 per cent less than in the other three positions. "For this we have no adequate explanation."

ISIDORE COHN.

**Pikin, F. M.: Experimental Study of the Treatment of Peritonitis** (Einige experimentelle Untersuchungen zur Frage der Peritonitisbehandlung). *Beitr. z. klin. Chir.*, 1914, lxxxix, 502. By *Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.*

In purulent peritonitis Hirschel recommended that 100 to 300 gm. of a 1 per cent solution of camphorated oil be poured into the abdominal cavity, claiming that, among other effects, it prevented the formation of adhesions. To test the truth of this, the author undertook experiments on dogs. He



found that camphorated oil had no effect on the course of the disease; the animals treated with it died at about the same time as the control animals. In spite of these results he tried camphorated oil in 8 cases of purulent peritonitis without any results.

Another series of experiments on rabbits was then tried. The serous surfaces of the large intestine were sutured to one another and after two weeks the abdominal cavity was again opened and the adhesions freed; camphorated oil was poured into the abdominal cavity of some of the rabbits and the others were kept as controls. Camphorated oil was also poured into the abdominal cavity of some normal rabbits.

On opening the abdominal cavity two weeks later it was found that a serous exudate had formed. After two more weeks there was an extensive fibrous deposit covering the intestine and this disappeared two weeks later.

From his experiments, the author comes to the conclusion that camphorated oil has no effect on the course of purulent peritonitis, and that in adhesive peritonitis it not only does not prevent but rather promotes the formation of adhesions.

VON HOLST.

**Kaufmann, C.: Examination for Abdominal Hernia** (Die Untersuchung auf Unterleibsvruch). *Cor.-Bl. f. schweiz. Ärzte*, 1914, xlv, 73.  
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Large abdominal hernias can always be easily diagnosed, the only difficulty being the distinguishing of an inguinal from a femoral hernia, or the confusion of an inguinal hernia with a cold abscess and the different forms of hydrocele, and of a femoral hernia with a varix of the saphenous vein.

The author gives a special method for demonstrating beginning or small hernias in either the standing or lying position. In standing, a sharp bending backward of the trunk causes tension of the anterior abdominal wall, so that palpation, or sometimes even inspection, allows the demonstration of the presence of a rupture. In the inguinal region the spermatic cord is taken between the thumb and index finger to see whether the cord swells, when the trunk is bent backward and the patient coughs. Examination in this position has the advantage that by tension of all the layers of the abdominal wall an interstitial inguinal hernia is fixed at the internal inguinal ring and cannot escape unobserved. The author has verified the correctness of this method of diagnosis by radical operation, and now as a general rule operates also on the apparently healthy side, confirming Gelpke's results, who in 80 per cent of all operations for inguinal hernia in young people found a completely formed hernial sac  $2\frac{1}{2}$  cm. long on the sound side. The bending back of the trunk has the same advantage in femoral hernia. The examination in the lying position that follows determines the degree to which the hernia can be replaced and the condition of the hernial opening and canal.

In examination for the military service, life insurance, or the railway service, the examination in the standing position is sufficient, while examination for accident insurance should also be performed carefully in the recumbent position.

KAERGER.

**MacLennan, A.: The Simplified Operation for the Cure of Hernia in Infants.** *Med. Press & Circ.*, 1914, xcvi, 357. By Surg., Gynec. & Obst.

The ordinary treatment of a hernia in an infant is by the application of a truss, or of a skein of wool, or by incessant reduction. With this treatment the author takes issue and claims that though the sac becomes untenanted it nevertheless remains a sac and the notice remains up—"To let." The presence of so many unoccupied sacs found in the cadaver and during operations goes far to prove the permanency of the sac, and in view of the fact that the anatomy of hernia in infancy is identical with that of later life, it is clear that any form of treatment which does not obliterate the whole sac is useless. So many cases are met with in adults with a history of an infantile hernia, said to have been cured, that, the author claims, it is doubtful if such cases were cured, and practically certain that no one ever develops a hernia who has not had since infancy a sac ready formed.

The author is in favor of an early operation in all cases of infantile hernia. The procedure is as follows: If phimosis is present the child is circumcized at least one month before the proposed radical operation. The skin is prepared with soap and water and alcohol, and chloroform is used as a general anæsthetic. The incision is made over the internal ring and should not exceed three-quarters of an inch. The deeper tissues are retracted apart by blunt retractors. The sac and cord are identified and picked up and drawn out of the wound. The sac is separated by wiping with gauze. The sac is treated by the Macewen method, the crumpled-up sac serving as an efficient plug at the internal ring. In young children there is no need for careful deep suturing of the structures as in an adult. The skin is closed with two or three silkworm sutures and a thin roll of gauze and adhesive used as a dressing. Elaborate dressings only annoy the infant and are unnecessary. The child may go home as soon as it recovers from the anæsthetic and should return in one week for removal of the sutures.

J. H. SKILES.

**Duval, P.: Congenital Diaphragmatic Hernia; Left Subclavicular Appendicitis** (Hernie diaphragmatique congénitale; appendicite sous-claviculaire gauche). *Bull. et. mém. soc. de chir.*, Par., 1913, xxxix, 1512. By Journal de Chirurgie.

A boy of 12 years had been ill since his birth, complaining of pain in the left side of the thorax. It appeared spasmodically with irregular difficulty in respiration and heart disturbance. Twice he had attacks accompanied by fever and vomiting.



Results of auscultation were variable and puzzling and a certain diagnosis could not be made until radiography showed that the cæcum and the ascending and transverse colon were in the left pleural cavity.

Left epigastric transverse laparotomy was performed and it was found that the orifice of the diaphragm was back of the greater curvature of the stomach. The incision was prolonged to the posterior angle of the eighth rib, the whole rib resected, and a large opening made in the pleura. Almost the whole of the small intestine, the cæcum, and the ascending and transverse colon were found in the thoracic cavity and were fixed by adhesions. The cæcum was thickened and inflamed, the appendix was enormous and surrounded by old caseous foci, the results of numerous attacks of appendicitis. The adhesions were freed and the appendix resected. Then, without much pain, the mass of intestines was replaced in the abdomen. The diaphragm was reconstructed by suturing; the thorax and abdomen were sutured. The pleura was punctured and the lung seemed to dilate; auscultation revealed breath sounds under the scapula. The child died the next morning with a pulse so rapid that it could not be counted, though the respiration was relatively normal.

This case of subclavicular appendicitis in a diaphragmatic hernia is rare, perhaps unique. The diagnosis of diaphragmatic hernia is almost impossible because it is manifested only by signs of occlusion. Radiography is of the greatest value. The only way of operating successfully and obliterating the abnormal orifice is through the thorax.

Two cases of diaphragmatic hernia are reported, both of which were found only on autopsy, though one of them had been operated upon twice for symptoms of occlusion, the cause of which remained unknown. He believes that such lesions can never be successfully treated by laparotomy, though the thoracic route gives free access. J. DUMONT.

#### GASTRO-INTESTINAL TRACT

**Schmieden, Ehrmann, and Ehrenreich: Modern Diagnosis of Stomach Diseases Verified by Forty Operative Cases** (Moderne Magendiagnostik an Hand von 40 operierten Fällen geprüft). *Mitt. a. d. Grenzgeb. d. Med. u. Chir.*, 1914, xxvii, 479. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The authors made a careful clinical examination of 40 cases of stomach disease and controlled the results by operation. History and present condition are given in detail, the chemistry and motility of the stomach tested, examination made for manifest and occult bleeding, the findings on palpation carefully noted, and the röntgen examination added. Especial attention is given to hunger and night pain.

Motility was tested by Strauss' method of adding a portion of whortleberries or currants to the evening meal and removing the remains the next morning

for examination. Röntgen rays were also used in testing the motility. The secretion was tested by examination of the stomach contents after an Ewald-Boas test breakfast.

Fourteen cases of carcinoma of the stomach were examined, 8 cases of ulcer of the duodenum, 3 of mixed ulcer, 6 of ulcer of the pylorus, 3 of ulcerated hour-glass stomach, 2 cases each of gastric achylia and gastropnoia and one case each of pericholecystitis and gastric crises. The conclusions are:

1. If stomach disease has existed for many years it indicates ulcer rather than carcinoma. Carcinoma generally arises in people who, up until that time, have never had stomach trouble.

2. Diagnostic conclusions can be drawn from age only with caution; 42.8 per cent of all the cases of stomach carcinoma were under fifty years of age.

3. Loss of weight is not conclusive evidence of carcinoma.

4. The author could not find that the history, night-pain, hunger-pain and cold-pain, played the part in differential diagnosis of ulcer of the duodenum that is generally ascribed to them. The point of pain on pressure at the right of the umbilicus has greater significance in duodenal ulcer.

5. In ulcer in the region of the pylorus there is pain especially when an effort is made to work. In half of the patients who complained of pain in the back there were adhesions to the pancreas.

6. The value of testing the stomach secretion for the differential diagnosis between ulcer and carcinoma cannot be denied. The majority of cases of ulcerative and post-ulcerative diseases of the stomach or duodenum are accompanied by increased acidity, while the reverse is true in carcinoma.

7. In ulcer the degree of acidity is less in stagnant stomach contents than in the test meal removed from the stomach; in carcinoma it is greater.

8. The lactic acid secretion does not have any great diagnostic value.

9. The demonstration of visible or occult blood in the fæces has great significance as proving the presence of ulcer or carcinoma.

10. In disturbances of motility the daily quantity of urine falls.

11. Röntgen examination almost always aids in the differential diagnosis between ulcer and carcinoma and often decides it. It is not of much value in simple ulcer.

12. Gastroscopy, for which Sussman's instrument is used, does not always succeed, does not give uniform results, and is not without danger. In one of the author's cases a fresh perforation found in a case of operation for carcinoma of the stomach was probably due to gastroscopy. BRENTANO.

**George, A. W. and Gerber, I.: The Practical Application of the Röntgen Method to Gastric and Duodenal Diagnosis.** *J. Am. M. Ass.*, 1914, lxii, 1071. By Surg., Gynec. & Obst.

The authors confess that the value of röntgenologic gastro-intestinal diagnosis has been criticized,



that many errors have been committed, and that much discredit has been cast upon this procedure. They say that this state of affairs has been brought about by several conditions and mention three as follows:

1. The pioneers developed a technique which relied largely upon fluoroscopy and "diagnosis by symptom-complexes," which "indirect" method the authors contrast with the "positive or direct method" which has been "so brilliantly developed."

2. Internists without technical experience have endeavored to do X-ray work, have made errors in diagnosis, and have enlarged the literature with comments on the inefficiencies of the method.

3. The clinical diagnosis has been allowed to bias the röntgen diagnosis. The authors say that a röntgen diagnosis should not be made unless there is "positive röntgen evidence", i. e., "a definite abnormality in the contour or structure (*sic*) of the bismuth mass." They do not explain why shadows of such abnormalities are more "positive" or "direct" than shadows which reveal exaggerated peristalsis, spasm, etc.

In the absence of an incisura and with normal size, shape, and position of the stomach, there is no positive basis for the diagnosis of gastric ulcer, though some investigators are willing to make an inferential diagnosis of gastric ulcer from the presence of tender-points and six-hour residue alone. The authors regard six-hour gastric stasis as the least important factor in röntgen bismuth diagnosis. They base the diagnosis of early fundal carcinoma partly on the presence of irregular defects of filling and partly on "abnormalities of peristalsis." Some space is devoted to well-known arguments for the diagnosis of duodenal ulcer by deformity of the cap. More and more cases are being found in which gall-stones are demonstrated. ALBERT MILLER.

**Smithies, F.: A New Fluoroscopic Sign for the Differentiation of Pyloric Spasm of Extra-Gastric Origin from that Associated with Uncomplicated Gastric Ulcer, on or near the Lesser Curvature.** *J. Am. M. Ass.*, 1914, lxii, 1308.  
By Surg., Gynec. & Obst.

By the fluoroscopic examination of the stomach, containing material opaque to the X-rays, fully 60 per cent of calloused and complicated ulcers are readily recognized and located with fair accuracy. Acute ulcers or those involving the pyloric half of the stomach or near the lesser curvature, particularly if these are of the uncomplicated type, must be judged to exist largely in the light of clinical history and laboratory data. This group gives the great majority of incorrect röntgen diagnoses; and when the mistake has been made, appendix or gall-bladder disease is the usual operative finding. To differentiate the pylorospasm of uncomplicated gastric ulcer near the lesser curvature from that due to a lesion of the appendix or gall-bladder, Smithies examines after the six-hour meal and with a standard buttermilk-bismuth or barium suspension. The

findings, which are similar to both, are noted. The patient then receives  $\frac{1}{50}$  gr. atropine sulphate hypodermatically, and is reexamined in half an hour. In true ulcers on the lesser curvature vigorous palpation will usually elicit a point of maximum tenderness, moving with the stomach and accompanied generally by an incisura. In pyloric spasm from appendix or gall-bladder lesions there is no sharply marked focus of tenderness which moves with the stomach or which upon palpation evokes an incisura. Reexamination on different days should confirm the finding. ALBERT MILLER.

**Reichel, H.: Röntgen Picture and Operative Findings in Carcinoma of the Pylorus** (Röntgenbild und Operationsbefund bei Pyloruscarcinomen). *München. med. Wchnschr.*, 1914, lxi, 137.  
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The comparison between the röntgen picture and the operative findings in a series of cases of carcinoma of the pylorus shows the value of the röntgen picture in the early diagnosis of this disease. The diagnosis is founded on the demonstration of characteristic changes in the shadow; chiefly on circumscribed gaps in the bismuth content of the stomach, and on visible signs of contraction and of disturbed motility.

The boundaries of the gaps in the bismuth content are generally zigzag and ill-defined and sometimes very peculiar; they often become clearer by palpation in front of the röntgen screen. In this way a marked hindrance to peristalsis in the suspected region may also be demonstrated. Generally in carcinoma of the pylorus the smaller curvature is more or less involved in the pathological changes.

Medullary or fungous tumors can be distinguished from the diffuse infiltrating forms of carcinoma. In the former the normal form of the stomach is maintained and the defects in the röntgen shadow in the pylorus and surrounding region are sharply defined; in the latter there is marked distortion of the stomach outline from contraction.

The röntgen picture gives valuable information for the diagnosis of carcinoma of the stomach where internal methods do not give any satisfactory diagnostic picture; it also gives supplementary information where there are no satisfactory clinical data as to the kind, location, or extent of a malignant tumor nor as to its operability. OEHLER.

**Delore and Santy: Gastrectomy in Cancer of the Stomach.** (Gastrectomie dans le cancer de l'estomac). *Lyon chir.*, 1914, xi, 113.  
By Journal de Chirurgie.

The chief point of interest in this article is Delore's statistics of 73 gastrectomies for cancer; the first 43 were published by Delore and Alamartine; the 30 most recent ones are published in detail at the end of this article. The following figures show the progressive improvement in results:

From 1903 to 1905, 18 operations with 8 deaths; 44 per cent.



From 1905 to 1908, 18 operations with 6 deaths; 33 per cent.

From 1908 to 1911, 18 operations with 3 deaths; 16.6 per cent.

From 1911 to 1913, 19 operations with 1 death; 5 per cent.

This improvement is not due to greater strictness in the choice of cases, for the proportion of radical operations is practically the same; before 1909 gastrectomy was performed in 25 per cent of the cases and from 1909 to 1913 in 26.5 per cent. The real cause in the improvement in the results is improved technique and the most careful pre-operative and post-operative treatment, and the use, in some cases, of a two-stage operation. This is especially indicated in cancers that have produced extreme stenosis and dilatation of the stomach. The two stages of the operation are performed as near together as possible, at intervals of 10 to 12 days.

Delore almost always uses Billroth's second operation, anastomosing the stomach and jejunum by means of a Jaboulay button. He pays great attention to preventive hæmostasis of the pedicles and the closing of the two ends, which he accomplishes by means of three fine catgut sutures. He buries the stump of the duodenum under the peritoneum in front of the pancreas. He recommends feeding the patients early, for if the sutures are not water-tight from the first they have no chance of becoming so; moreover, the fact that irrigation of the stomach in gastric hæmorrhage immediately after operation is harmless shows that the stomach is impermeable at that time. In a general way the immediate and late results of gastrectomy are better than those of gastro-enterostomy; therefore, Delore and Santy give the preference to gastrectomy even as a palliative operation in cases where excision cannot be absolutely complete. Adhesions and involvement of the glands, which are often inflammatory and not neoplastic, are not an absolute contra-indication to gastrectomy.

CH. LENORMANT.

**Porta, S.: Biondi's Method of Excluding the Pylorus** (L'exclusion pylorique à la Biondi). *J. de chir.*, 1914, xii, 297.

By Surg., Gynec. & Obst.

Porta reviews the indications for exclusion of the pylorus and describes a new technique used by Biondi, because he has found the older methods defective. The various methods of section take an exceedingly long time, thorough asepsis is not possible, and it is difficult to mobilize the parts operated upon, especially if there are solid adhesions. The plastic methods and those by ligation are only temporary. Permeability of the pylorus is eventually reestablished.

Biondi makes an incision 6 to 10 cm. long on the anterior surface of the antrum parallel to the axis of the stomach, involving the serous, submucous, and muscular coats. This incision extends from the antrum towards the duodenum, where the mucous membrane is more easily torn. The mucous membrane is then dissected and a tube of it

closed at each end by being transfixed with two silk sutures. It is excised and the incision sutured in three layers, the layers being turned in. Care should be taken to cover the line of suture with serous membrane. Kausch's gastro-enterostomy is performed before the exclusion.

Experiments on the cadaver and animals have shown that it is not a difficult procedure. The mucous membrane at and near the pylorus is thicker and more resistant than that of other regions of the stomach, so that it is easily dissected. Care should be taken not to involve the muscularis mucosæ, and if it is necessary to pass beyond the pylorus into the duodenum greater care must be exercised, for the muscular and connective-tissue layers are greatly reduced in thickness. It is a good plan to put the end of the left index finger between the muscular and mucous coats at the upper edge of the incision and then dissect from the lower edge until the finger is reached.

Ulcerations or inflammatory tumors do not interfere with the operation. Superficial ulcerations may make holes in the tube but that does not do any harm. The advantages of the method are that it does not involve the large gastro-omental vessels, it is performed in parts that are covered with peritoneum, it does not demand the opening of the posterior cavity of the omentum, it is easy to perform and it is much easier to maintain asepsis than in the other methods. It can be performed when there are adhesions, and it does not produce any change in the form of the stomach. The closure of the pylorus is permanent and it is not followed by pain. Porta has performed the operation three times with excellent results, Biondi 9 times, and other operators several times. He concludes that it is the operation of choice in the exclusion of the pylorus.

A. Goss.

**Bier, A.: Diagnosis of Ulcer of the Duodenum** (Zur Diagnose des Ulcus duodeni). *Deutsche med. Wchnschr.*, 1913, xxxix, 2492.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The knowledge of duodenal ulcer has been extended recently but the point of greatest interest is still the diagnosis. As Moynihan has had the greatest experience on this point, Bier uses his results as a guide and discusses a series of 43 cases operated on in his own clinic.

The condition is more frequent in the male sex, but in contrast to the English and American authors, he found ulcer of the duodenum less frequent than ulcer of the stomach. The most important point in the diagnosis is the history, which according to Moynihan makes physical examination of the patient almost superfluous, although of course he always makes the examination. The chief points are the hunger-pain and the paroxysmal nature of the pain; the disease itself is of long duration. Premonitory symptoms are discomfort and distention, several hours after eating, and acid or bitter eructations.



From Moynihan's description it would seem that with a careful history a mistake in diagnosis is scarcely possible, and he himself made only three mistakes in 100 consecutive cases. But Bier has found that in spite of a perfectly characteristic history in many cases, no ulcer was to be found on laparotomy, and on the other hand often when there was an ulcer there had been no history to indicate it; the latter was the case on abdominal incision in 20 of the 43 cases. He gives a case history which shows that there may be no ulcer though there is a characteristic history.

The results of palpation are of limited value, especially the pain on pressure on the right side and the tension of the right rectus; chemical examination is made only for the sake of completeness. Even the röntgen picture is not nearly so valuable as in ulcer of the stomach, as is shown by the fact that so many signs are given, none of which is really characteristic.

The most constant finding, increased peristalsis, is found also in other conditions, the permanent bismuth shadow may be deceptive, and the signs of penetrating ulcer are so rare as to be of only limited value; cicatricial stenosis is not easy to recognize in the röntgen picture. However, the röntgen examination should always be made, if only for the purpose of showing the presence or absence of stomach disease. On the other hand, the demonstration of occult blood is of great diagnostic value, allowing for the sources of error in it.

In differential diagnosis it is not easy to decide between ulcer of the stomach and of the duodenum, there is less difficulty in deciding between ulcer and gall-stones, and Bier has had no difficulty in distinguishing between ulcer and appendicitis. While the diagnosis of ulcer of the duodenum is difficult, the author does not think it more difficult than the diagnosis of ulcer or carcinoma of the stomach was before the development of röntgen technique, and in which there are even yet mistakes in diagnosis.

BODE.

**Marquis: Perforation of a Peptic Ulcer of the Jejunum Six Years after a Gastro-Enterostomy; Operations; Recovery. Influence of Various Methods of Gastro-Enterostomy in the Production of These Ulcers** (Perforation d'un ulcère peptique du jéjunum six ans après une gastro-entérostomie; opération; guérison. Influence des diverses techniques de gastro-entérostomie sur la production de ces ulcères). *Bull. et mèm. soc. de chir., Par.*, 1913, xxxix, 1517. By Journal de Chirurgie.

Hartmann reports a case, as described in the title, operated on by Marquis. The last statistics in regard to ulcers of this sort by Van Roojen in 1910 showed 81 cases. Hartmann has collected 42 from the literature and reports one of his own and this one of Marquis, making a total of 125 cases. On these cases he bases a study of the conditions which lead to their production. They come on three months to eleven years after the initial gastro-enterostomy; they are more frequent in men than

in women in the proportion of five to one; they always follow gastro-enterostomy for ulcers and more frequently the Y-shaped operation.

It seems to be settled that the chief cause of these peptic ulcers is the prolonged contact of a very acid gastric content with the mucous membrane of the jejunum; but for the ulcers seated just at the gastrojejunal opening, faults of technique seem to be to blame, such as silk projecting into the lumen, hæmatoma, or the delayed elimination of a Murphy button. It is these gastrojejunal peptic ulcers that cause the retractions, sometimes obliterations, of the mouth of the anastomosis that have been attributed to persistent permeability of the pylorus.

From all of the evidence he concludes that to prevent such ulcers it is necessary: (1) At the time of the operation, (a) in order to prevent the passage of acid gastric juice over the jejunum, to avoid Y-shaped gastro-enterostomy, and (b) to avoid all traumatism of the surface; therefore not to use the button for anastomosis, nor to crush the tissues with clamps, and to secure perfect coaptation with the sutures; (2) after the operation, (a) to irrigate the stomach the first few days at any sign of infection or gastric putrefaction; (b) to keep patients under treatment and not consider them radically cured because a gastro-enterostomy has been done; the mucous membrane is chronically inflamed and it requires some time to restore it to a normal condition. By observing these rules most of these cases of peptic ulcer may be prevented.

DELBET believes that silk sutures are at fault, as they are eliminated slowly and favor the penetration of the gastric juice into the tissues.

CUNEO does not believe that silk and the use of clamps has anything to do with the production of these ulcers. He believes the chief cause is the persistence of a high hydrochloric acid content. In such a case he would be disposed to operate on the nervous secretory mechanism of the stomach to decrease the acidity.

TUFFIER has never had a case. He believes they are due to hyperchlorhydria rather than to the technique employed. He never uses clamps and long ago gave up silk for linen.

WALTHER agrees with Tuffier and uses the same technique.

RICARD had one case, in which he resected the lips of the ulcer and sutured it again with good results. He believes the ulcers may be due to a certain extent to hyperacid secretion but thinks the chief cause is faulty technique. J. DUMONT.

**McLean, A.: Post-Operative Ileus.** *Ann. Surg., Phila.*, 1914, lix, 407. By Surg., Gynec. & Obst.

McLean gives the results of experimental investigations into the possible causes of death following ileus and how to overcome the effects of ileus once it is present.

The clinical picture in both the mechanical and paralytic varieties is the same. Necropsy has



shown that in some fatal cases no signs of peritonitis were present. "What is the cause of death in these cases?" "The prevailing impression in regard to the cause of death in ileus seems to be that it is a toxic condition originating from the absorption of bacteria or their toxins or from the absorption of some altered physiologic secretions of the pancreas, liver, and intestinal mucosa."

McLean produced artificial intestinal obstruction about 8 inches from the pylorus in dogs. The duodenal and gastric secretions of these cases were tested as to their toxicity by injecting a filtrate into guinea pigs. The pigs remained lively and well.

The serum from the experimental animals was injected into guinea pigs. The guinea pigs which received more than 2 ccm. died as a rule. It was found that normal dog serum injected into guinea pigs in 2 ccm. quantities proved fatal.

The gas from the intestine of the experimental dog was injected into the peritoneal cavity of normal dogs without causing symptoms. The blood was directly transfused to normal dogs without causing symptoms.

McLean therefore concludes that death is not due to toxæmia. He further noted a marked loss of weight, usually amounting to one tenth of body weight before death. This loss of weight is attributed to the loss of body fluids (vomitus, etc.). This loss of weight McLean believes must have an enormous effect on blood-pressure. Braun has shown in experiments on blood-pressure that the death of animals from ileus differed in no way from those bled to death slowly. Consequent upon this fall in blood-pressure is a disturbance in the cerebral circulation. This McLean considers one of the prime factors of the direct cause of death in ileus. Hartwell and Hoquet have shown that life in experimental dogs can be prolonged by introducing saline to replace the fluids lost.

The rational treatment based on his experiments as suggested by McLean is: (1) Subdue the distention (ileostomy), and (2) restore the fluids lost by hypodermoclysis, proctoclysis, etc. ISIDORE COHN.

**Jordan, A. C.: Intestinal Stasis from the Standpoint of Radiology.** *Inter. J. Surg.*, 1914, xxvii, 103. By Surg., Gynec. & Obst.

The author describes in detail his technique in the radiological examination of the intestinal tract. No preliminary care of the patient is necessary. About one hour after breakfast the patient is given an emulsion consisting of carbonate of bismuth, 4 oz., sugar of milk, 1½ oz., and enough water to make a creamy fluid. The chest, œsophagus, stomach, and duodenum, are examined at once. The ilcocæcal region is investigated at the second visit, five to seven hours later. Often a third visit is required the same day, nine to twelve hours after the bismuth meal. The subsequent visits for the large intestine are usually timed to fall at the following periods after the bismuth meal: 24 hours, 36 hours, 48 hours, 72 hours, and 96 hours.

The examination of the duodenum may show a dilatation and lengthening even in the early stage of intestinal stasis. In addition to the change in size there is increased activity of the peristalsis, in fact, in many cases the duodenum may give the appearances of writhing. These changes are due to a kink at the duodenojejunal junction. Ileal stasis is always present when there is an extended duodenum. This often results in an ascending infection from the cæcum, which may travel up as far as the duodenum. The ileal stasis may be due to a mechanical obstruction in the ileum or lower down in the large intestine. Many times the appendix is responsible for the kink, but any of the locations of bands may be the seat of the obstruction.

JAS. H. SKILES.

**Maggiore: Two Cases of Congenital Megacolon** (Deux cas de mégacolon congénital). *Pædiatria*, 1914, xxii, 33. By Journal de Chirurgie.

The first case cited is a child of six, born at term—the father tubercular. There was stubborn constipation from birth; a bowel movement occurring only every 8 to 12 days; the patient was pale and poorly developed, the abdomen distended to 62 centimeters at the umbilicus. There was elevation of temperature, vomiting and discharge of blood from the anus; 3 kg. of fæcal matter was removed manually and the patient died in collapse. The large intestine showed enormous dilatation and the intestinal wall was 5 mm. thick.

The second case was a child of two years and two months, born at term—the father syphilitic. There had been stubborn constipation since birth, bowel movements occurring only every 8 to 15 days; the child was poorly developed. The abdomen was almost normal in size; there was meteorism on percussion.

The author attributes death in his first case to syncope caused by the extreme dilatation of the large intestine, though it is not possible to exclude intoxication from the fæcal matter. Hypertrophy of the wall of the large intestine is a congenital malformation which in these two cases was due to paternal infection, syphilis in one case and tuberculosis in the other. P. GRISEL.

**Don, A.: Is Colectomy for Constipation a Radical Procedure?** *Clin. J.*, 1914, xliii, 209. By Surg., Gynec. & Obst.

The author discusses the various causes suggested by Lane and other supporters of colectomy for constipation, not agreeing in a single instance with the arguments advanced. The statement that "the erect position causes falling down of viscera" is denied on the score that the liver and spleen, the two heaviest organs, show no tendency to fall and because clinically the intestines contain so much gas that they tend to rise. Don claims that no evidence is brought forward that "the cæcum becomes elongated and dilated" and claims that inasmuch as the hepatic flexure is normally in contact with the



liver it cannot "occupy a higher position than in the healthy subject" as the Lane school asserts. Lane is accused of not troubling himself with logic or proofs and in a comparative table is placed Lane's list of the affections which may be cured by removing the colon, side by side with the advertisement of a well-known quack pill.

The comparative anatomy of the domestic animals is brought in to show that although these animals are not costive yet their intestinal tracts contain many bands, narrowings, sacculations, kinks, twists, and mobile and fixed portions, which to the author would appear to afford many excuses for surgical activity. Radiology is stated to be a comparatively new aid to the study of abdominal diseases and as yet there is no standard.

Don believes that the pathologists alone can settle the question as to whether the bands which are found are inflammatory or not. If they are exaggerated congenital formations it should be possible to repair them without removing the colon, while if they are inflammatory the cause of the inflammation should be found before a colectomy is done.

E. K. ARMSTRONG.

**Gruet, P.: Best Technique for Externalization in the Extirpation of Cancer of the Colon** (De la meilleure technique opératoire applicable à la méthode d'extériorisation dans l'extirpation des cancers coliques). *Thèses de doct., Par.*, 1914.

By Journal de Chirurgie.

The author describes the present status of the question of externalization of cancers of the colon. He describes in detail the technique of Guénu, who holds that the tumor must be brought outside the abdominal wall, but the pedicle may remain inside the abdomen if it is outside the peritoneum.

1. The first stage consists of extraperitoneal externalization of the tumor, extraperitoneal externalization of the pedicle. After exploring and freeing the tumor the loop is externalized. The mesentery being spread out, the peritoneal leaf of one of its surfaces is slightly incised, and then dissected as far as possible, passing well outside the suspected zone, and the peritoneum thus dissected is sutured to the parietal peritoneum. The same thing is done on the other side. The abdominal wall is closed above and below the externalized loop.

2. In the second stage resection of the neoplasm is performed, followed by suture of the posterior semicircumferences of the ends of the intestine and suture of the two interior semicircumferences in the skin wound. This is performed about 8 days after the first.

3. In the third stage the artificial anus is closed by enterorrhaphy. This should not be done until the general health has improved. Guénu always performs this enterorrhaphy strictly outside the peritoneum.

Gruet has collected 117 cases, 7 of them being Guénu's. The first case was cancer of the splenic flexure. Death occurred 8 days after the closing

of the anus from hæmorrhage. The second case was cancer of the splenic flexure without closure of the anus. The patient survived 3 years. In the third case, cancer of the descending colon, no closure of the anus; recurrence in the liver 4½ months after the operation. Case 4. Cancer of the sigmoid. Recurrence in the true pelvis 16 months later. Case 5. Cancer of the termination of the sigmoid loop. No closure of the anus. Recovery. Case 6. No details. Case 7. Sigmoid cancer. Patient in good health after 6½ years. The work closes with a very important statistical study and the author concludes:

Externalization should only be performed in cancers of the left colon, especially in feeble patients with vegetating septic cancers accompanied by lesions of the wall of the adjacent loop. Reybard's colectomy or the methods of colectomy in two stages should be reserved for the favorable cases of small movable cancers without marked lesions of the adjacent loop and for patients who are still in good general health. Externalization is sometimes an operation of necessity, but more generally of prudence, and its indications should be extended where the surgeon is in doubt as to the condition of the intestinal walls.

J. L. ROUX-BUPE.

**Jackson, R.: Some Unusual Phases of Sigmoidoscopy.** *Tr. Am. Proctol. Soc.*, Atlantic City, 1914, June.

By Surg., Gynec. & Obst.

The diagnostic value of the sigmoidoscope has been the topic for much discussion and is increasingly appreciated by hospitals, but much less so by the profession and insufficiently in medical teaching. Explicit statements of its considerable therapeutic uses are not found in German, American, or English literature. The instrument enhances the extent and accuracy of rectosigmoidal therapeutics, and specifically it facilitates the use of certain instruments, topical applications, the relief of high impaction, and the treatment of stricture and certain other lesions. Serious trauma from the sigmoidoscope is more liable to happen than some authorities admit, as illustrated by three cases of intestinal perforation cited from the German. Two personal cases are detailed, where the patients were in serious condition from occlusion of the bowel, but were relieved and saved by sigmoidoscopy done with diagnostic intent only.

Pelvic visceroptosis, hypermobility of the sigmoid, and the fixed and open rectal ampulla beneath, predispose to invaginations and angulations, which are fairly frequent in mild and chronic form and are potentially dangerous as a source of acute obstruction. Sigmoidoscopy, properly conducted, empties the pelvis by gravity—due to the position assumed—by intelligent introduction of the instrument, and by the air pressure admitted through it, and therefore tends to undo such intestinal malpositions. The occlusion in the two cases related was unexpectedly relieved and doubtless in this way.



Greater prevalence in the use of the sigmoidoscope would bring to light a field for deliberate therapeutic use of the instrument along these lines.

**Graham, A. B.: Perirectal Gumma; Report of Two Cases.** *Tr. Proctol. Soc., Atlantic City, 1914, June.*  
By Surg., Gynec. & Obst.

The subject perirectal gumma owes a great deal of its interest to its rarity. The two cases reported are rather unique and worthy of publication. They were seen within twenty-four hours of each other, and both presented a typical perirectal gumma in that no lesion of any kind could be detected in the rectum of either patient.

The first patient, aged 47, contracted syphilis at the age of 24. He was treated for one year with mercury, administered internally and by inunctions, and pronounced cured. One year later, a large ulceration developed on the left leg above the knee, which under persistent antispecific medication required two years to heal. Ten years ago, numerous ulcerations appeared in his mouth and throat. A diagnosis of syphilitic ulceration was made and under local treatment alone these ulcerations disappeared in a few weeks. Two years ago, ulcerations again being present in the mouth and throat, salvarsan was administered by injection into the right buttock. This caused much pain and it required one year for the complete disappearance of the induration at the site of the salvarsan injection. The Wassermann test was not made, nor was any further antispecific treatment prescribed.

In November, 1912, the patient experienced a slight aching sensation about the rectum. He consulted a proctologist, who was unable to find any rectal lesion. Three months later, he detected a nodule or induration in the right ischiorectal fossa. This increased rapidly in size. February 28, 1913, he was referred to the author, the diagnosis of ischiorectal abscess having been made. An examination revealed a case almost identical to that which had been reported by Verneuil. There was a marked induration at the margin of the anus the size of a large orange, and it extended across the right ischiorectal fossa. It was smooth, elastic, painless to palpation, and fluctuation could be detected. Believing that the tumor contained pus, immediate incision was advised. This was done under local anæsthesia. A deep incision was made into the most prominent part of the induration. It was something of a disappointment as well as a surprise when nothing beyond a discharge of blood was obtained. The author fully appreciated his error in diagnosis and the possibility of his having incised a gumma. The Wassermann test was made and it proved to be a two plus positive. Salvarsan was administered intravenously and the wound healed at the end of ten days. The induration disappeared rapidly. One month later, suppuration occurred which necessitated an incision for the evacuation of the pus. The wound healed rapidly and there is now no evidence of an induration or

fistula. Careful examination in this case failed to reveal any rectal lesion. The patient is still under observation and is receiving antispecific medication.

The second case was a woman, aged 28, the mother of a child one month old. She had contracted syphilis three years before; had received anti-syphilitic treatment for one year, but no Wassermann test had ever been made. She consulted the author March 1, 1913, stating that she had a lump outside the rectum which had appeared three weeks previously and that it was increasing rapidly in size. An examination revealed an induration very similar to that which has been reported in Case 1, except that it was in the left ischiorectal fossa. It was smooth, elastic, painless to palpation, and there was marked evidence of fluctuation. The temperature and pulse were normal. A rectal examination revealed no lesion. A diagnosis of gumma was made, this being somewhat easy, owing to the diagnostic error in Case 1 having been made only twenty-four hours previous. The Wassermann test was made and proved to be positive. Salvarsan was given intravenously. The gumma decreased rapidly in size and at the end of three weeks it had disappeared completely. No suppuration occurred in this case. A Wassermann test made one month ago proved negative.

The conclusions are: Perirectal gummata are rare. The two cases reported are unique and of interest in that both were typical examples of perirectal gummata. In both cases the gumma was seen in its early, or vascular, phase. In one case it appeared 23 years after the initial lesion; in the other case it appeared three years following the syphilitic infection. Both gummata were painless to palpation and fluctuation was detected in both. An error of diagnosis in one case was responsible for the incision and subsequent suppuration which followed. In the other case no incision was made and suppuration did not occur. No demonstrable rectal lesion could be discovered in either case. The induration in both cases disappeared rapidly under antisyphilitic medication. No fistula resulted in either case.

**Hassler, G. L.: Recurrence in Cancer of the Rectum** (Contribution à l'étude des récurrences dans le cancer du rectum). *Thèses de doct., Lyon, 1914.*  
By Journal de Chirurgie.

Hassler studies only local recurrence at the site of the operation, not recurrence in the glands or metastases. From 22 cases and many statistics he concludes that there is recurrence in about 52 per cent of the cases, a figure which is perhaps somewhat too low, if it is taken into account that there was no information in regard to many of the patients.

The frequency of recurrence is, like the severity of the cancer, inversely proportional to the age of the patient. Young people bear the operation well but are apt to have early recurrence; in old people the operation is more serious, but the results more durable. Sex also has a certain influence; the results



are better in the female because the operation is easier.

No relation could be established between the site of the tumor and the frequency of recurrence. It is difficult to determine the exact date of the appearance of recurrences. This date, however, does not seem to depend on the method of operation used. Recurrences are frequent during the first year, rare during the second, and so exceptional after the third that a case is cured if there has been no recurrence by that time.

Extensive cancers, especially colloid cancers, are more apt to recur. Whatever their histological form, however, they may recover if a sufficiently extensive operation is performed. All the methods of operation may give good results, the chief thing being to remove a large area and to avoid inoculation.

The perineal method gives permanent recovery, but is applicable only to a limited number of cases; the combined abdominoperineal method is very superior to the others because it permits more extensive removal of tissue in difficult cases. Nevertheless, all the methods have their indications, depending on the site of the neoplasm, the existence of extensive adhesions, the age, and the degree of resistance of the patient.

Recurrence generally takes place low down in the perirectal cellular tissue or in the scar, rarely on the mucous membrane. They often extend to neighboring organs and frequently they develop backward, adhering to the sacrum and then invading it. These cases are serious because difficult to operate upon. In fact, operation can rarely be performed, because they are seen too late. In spite of the opinion of certain authors to the contrary, operation should be performed whenever it is at all possible. The patient's condition is improved, the pain is decreased, and one may, even after several operations, secure permanent cure. L. HOUDARD.

**Edwards, F. S.: A Protest against the Indiscriminate Use of the Abdominoperineal Operation in Cases of Rectal Cancer.** *Proctologist*, 1914, viii, 12. By Surg., Gynec. & Obst.

The author believes that the abdominoperineal operation used indiscriminately in any case of cancer, large or small, situated high or low, causes the loss of many lives, for the operation is accompanied by a 50 per cent mortality.

Edwards believes the operation is indicated (1) in all cases situated in the rectosigmoid junction, or lower pelvic colon. (2) In cases where the spread of the growth is suspected outside of the bowel due to inflammatory adhesions. (3) In cases of rapidly-growing carcinoma in young people. It is contra-indicated in patients over 70 years of age and in fat males.

The author has operated 89 cases by the parasacral or paracoccygeal method with a mortality of only 5 per cent and a cure in 45 per cent of all cases.

EUGENE CARY.

**Anderson, H. G.: Post-Operative Hæmorrhage in Rectal Surgery.** *Proctologist*, 1914, viii, 15. By Surg., Gynec. & Obst.

The author has encountered 12 cases of post-operative hæmorrhage: 11 in hæmorrhoid cases and 1 in a case of fistula. He classifies them as follows:

1. Recurrent, within 24 hours after operation from unligated vessels or where the ligature has slipped.

2. Secondary, later than 24 hours, usually due to sloughing or sepsis. Usually venous in character.

3. Accidental, anything interfering with the operative field.

4. Late hæmorrhage, weeks, months or years later, due to cancer, ulceration, pernicious anæmia, etc.

Another division may be: external and internal hæmorrhage. The hæmorrhage if external can usually be controlled by packing with cotton-wool, or ligation; if internal, the sphincter should be stretched and the bleeding point ligated.

EUGENE CARY.

#### LIVER, PANCREAS, AND SPLEEN

**Ströbel, H.: Talma's Operation and Cardiolyse (Talma-operation and Kardiolyse).** *Beitr. z. klin. Chir.*, 1914, lxxxviii, 704.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author reports the permanent results obtained at the Erlangen surgical clinic with Talma's operation and cardiolyse. The Talma's operation was used 10 times in cirrhosis of the liver, and detailed reports of 8 cases were obtained. In 2 cases there was recovery, operation having been performed in one case 9 years before and in the second 5 years. In a third case operated on 5 years before there was improvement; 4 patients died from three weeks to one and one-half years after the operation. One case, 7 months after the operation, showed no improvement. Talma's original method was used, also Narath's modification introducing the omentum into the subcutaneous tissue, and Lanz's method of transporting the testicle to the abdominal cavity. No special advantage was seen in either of these modifications.

The author concludes that all cases of cardiac cirrhosis are unsuited for this operation, while the cases of primary liver cirrhosis give better results, varying with the stage of the disease. The patients had to be punctured several times after the operation to keep the ascites permanently under control.

Brauer's method of cardiolyse was used in three cases of adhesions of the pericardium, which is the cause of cardiac cirrhosis, where there was not very serious affection of the myocardium. One case operated upon 5 years ago is still in good general condition; the second case died two years after the operation, of apoplexy; in the third, three months after the operation there was no improvement. To lay bare the heart a large flap was made with the base directed medially or laterally, and the

ribs resected at least from the third to the sixth. Cases in which serious changes have taken place in the myocardium are not suited for this operation.

OEHLER.

**Pfahler, G. E.: The Röntgen Rays in the Diagnosis of Gall-Stones and Cholecystitis; An Improvement in Technique.** *J. Am. M. Ass.*, 1914, lxii, 1304. By Surg., Gynec. & Obst.

Pfahler discusses the difficulties to be overcome and insists on the patient being thoroughly purged by a bottle of magnesia at night, and the picture taken the next morning before any breakfast is eaten. He removes all clothing and has the patient lie on the abdomen with arms extended over the head; the upper part of the body is bent to the left, opening the space between the lower ribs and the crest of the ilium to the widest possible angle. He takes a second picture by passing the rays directly through the liver between the eleventh and twelfth ribs, this position differentiating foreign substances or concretions in the bowel. The pictures are taken while the patient is holding the breath.

The author has used this technique in 50 cases; 17 have not as yet been operated on. Of the 33 which went to operation he found stones in 20, and the surgeon reported stones in 27. The probability of stones was diagnosed in two others which were not found by the surgeon. He thinks his finding of 20 in 27 cases high, as in general not more than 50 per cent can be shown. JOHN G. BURKE.

**George, A. W. and Gerber, I.: The Demonstration of Gall-Stones by the Röntgen Ray.** *Boston M. & S. J.*, 1914, clxx, 680. By Surg., Gynec. & Obst.

The clearness of demonstration of gall-stones upon plates will be in proportion to the amount of calcium present. Pure cholesterin stones cannot be differentiated; fortunately, however, they do not cause many chronic disturbances. The technique is very simple. The complicated methods for projecting away the liver shadow are unnecessary. With the patient lying upon the table with his face down, the plate is placed under the right hypochondriac region. The maximum of the sharp definition is obtained with a very small diaphragm, one and one-half inches in diameter, and a very small cylinder placed close down upon the back. It is preferable to use a fairly soft tube with a rapid exposure, and it is better not to use intensifying screens, but to use the simple plates as in kidney work.

Five case reports are given with plates showing gall-stones and one case of ossified costal cartilage simulating gall-stone.

The author believes that the demonstration of gall-stones by the röntgen ray has already reached a position in this country that warrants its more general use.

It is advisable to examine the gall-bladder region for stones prior to every bismuth examination of the alimentary tract. The chief sources of error are renal calculi, calcified mesenteric glands, and costo-

chondral ossification. These can be differentiated by proper technique. D. R. BOWEN.

**Crile, G. W.: Cholecystectomy vs. Cholecystostomy and a Method of Overcoming the Special Risks Attending Common Duct Operations.** *Surg., Gynec. & Obst.*, 1914, xviii, 429.

By Surg., Gynec. & Obst.

From a careful study of 832 operations on the biliary tract performed by the author and his associates, the following conclusions are drawn:

1. Considering all the later consequences of infection, cholecystectomy in the type of cases indicated shows less morbidity than cholecystostomy. In these cases the clinical end-results of cholecystectomy are good; in unsuitable cases cholecystostomy is followed by recurrent cholecystitis.

2. No adverse effects from cholecystectomy have been seen, provided that the division is made at the beginning of the cystic duct; that no gall-bladder is left; and that the division does not at all encroach on the common duct. This technique can be readily carried out.

3. If acute infection be present, then in most cases cholecystostomy should be first performed, followed if required by a later cholecystectomy.

4. If the gall-bladder and the cystic duct be approximately normal, then the gall-bladder should be left, cholecystostomy being the operation of choice. If the gall-bladder be thick, contain much scar tissue, be shrunken, show chronic infection of the wall, be much impaired; if the cystic duct be partially or completely strictured; or if a stone be impacted in the duct, then cholecystectomy should be performed.

5. All gall-bladder operations, and especially common-duct operations, may be performed with a minimum of shock and discomfort by thorough nerve-blocking with novocaine, by sharp dissection, and gentle manipulation.

6. The principal causes of the higher mortality in common-duct operations are the damage done to the nerve supply of the liver, and the loss of bile salts. The sharp knife dissection and the clean-cut, ample incision into the common duct, with the consequent minimum nerve injury and minimum injury to the duct and its neighborhood, and in suitable cases the immediate closure of the common-duct by suture, will immensely improve the morbidity and the mortality following common duct operations.

7. The mortality rate in the 832 records studied for the purposes of this paper was 7 4/5 per cent. This mortality rate, as well as the post-operative morbidity, will be decreased by the application of the technical procedures described above.

**Mayo, C. H.: Cholecystitis and the Factors that Control Results of Operation.** *J. Lancet*, 1914, xxxiv, 175. By Surg., Gynec. & Obst.

Mayo notes that the results of operation for cholecystitis are influenced by many conditions



besides those in the gall-bladder itself. Among these, he enumerates infections within the liver and bile-ducts causing changes in the balance of the acidity of the stomach and of the alkalinity of the duodenum, the presence of pyloric spasm, and changes in the pancreas. He calls especial attention to a group of lymphatic glands extending along the common and hepatic ducts and on the cystic duct. He notes that any case of cholecystitis with sufficient infection to produce symptoms will necessarily affect these glands. In the majority of cases, if these glands are much enlarged, a lymphoedema of the head of the pancreas will be found as well as infection of the gall-bladder. An exception is the general swelling of the mesenteric glands through malignancy or gross abdominal infection.

The majority of cases of cholecystitis are undoubtedly best relieved by cholecystectomy.

**Mayo, W. J.: Cholecystitis without Stones or Jaundice, in Its Relation to Chronic Pancreatitis.** *Am. J. M. Sc.*, 1914, cxlvii, April.

By Surg., Gynec. & Obst.

The types of chronic cholecystitis without stones vary in intensity from the mild chronic catarrhal to those characterized by necrosis of the mucous membrane, perforation, and other manifestations of severe bacterial infection. Not infrequently the condition is associated with appendiceal infections of a chronic character, especially those forms of appendicitis in which foreign bodies, usually fecaliths are present. Whether or not such appendicular infections are the direct cause of the infections in the gall-bladder has not been determined, but it seems possible inasmuch as bacterial or toxic products are picked up in the derivatives of the portal circulation, carried to the liver, and there destroyed or excreted in a modified form with the bile. When such infected bile is delayed in the gall-bladder, cholecystitis may result.

The clinical diagnosis of cholecystitis even when stones are present is not always easy. With the palm of the hand an area may be covered which could be involved in pyloric and duodenal ulcer, disease of the gall-bladder, appendicitis and stones, or infections in the right kidney or right ureter. Pain referred to this region may also be due to small ovarian dermoids and early extra-uterine pregnancy. Even when the abdomen is open, a gall-bladder markedly diseased in its mucous membrane may give little or no evidence of such disease by external examination. The strawberry gall-bladder represents the characteristic appearance of the affected villi due to loss of the epithelial covering, the connective-tissue base being stained with bile. Removing such a gall-bladder gives almost certain relief. The more this condition varies from the normal, the less the probability of cure. Cholecystitis, if present, is so mild as not to cause the symptoms.

In many cases the only way in which a diagnosis can be established is to open and inspect the mu-

cosa and often a microscopical examination will be necessary.

If so much uncertainty exists with regard to the gall-bladder and its infections, much more uncertainty must exist as regards the pancreas and its infections. The sense of sight cannot aid in solving the question as in the examination of the mucosa of the gall-bladder and a specimen will probably not be removed for pathologic examination. The diagnosis must be established by the sense of touch and a certain amount of intuition on the part of the diagnostician which unfortunately often plays too large a part in his final judgment. In practicing a routine examination of the contents of the abdomen the author states he has been surprised to find how frequently the pancreas showed enlargement, induration, and nodulation which would have justified a diagnosis of chronic pancreatitis if some disease of the biliary tract had been the original lesion, but in which there was no symptomatic evidence that pancreatic inflammation existed. Well-marked cases of chronic interlobular pancreatitis involving the head and often the entire pancreas, present conclusive evidence of pancreatitis. Such extreme evidences of chronic pancreatitis are seldom found without infection of the biliary tract, but, in cases less marked, the evidence is often insufficient to establish the diagnosis especially when neither gall-stones nor jaundice are present. There is still another group of cases in which cholecystitis of the chronic type without gall-stones and without jaundice is accompanied by undoubted chronic interlobular pancreatitis. In such cases there is no dilatation of the common duct nor is the gall-bladder distended.

In the presence of chronic pancreatitis without jaundice and without evidences of back pressure on the biliary tract, the gall-bladder should be removed if it shows marked evidence of chronic cholecystitis, especially the strawberry type.

**Danis, R.: Results of Grafting Blood-Vessels on the Bile Passages** (Résultats de la greffe de vaisseaux sanguins sur les voies biliaires). *Ann. Soc. belge de chir.*, Brussels, 1913, xxi, 243.

By Journal de Chirurgie.

Danis operated on two dogs as follows: A rectangular piece was cut from the lower surface of the gall-bladder and replaced by a segment from the jugular vein. Three months later he examined the results. The peritoneum was entirely normal, the internal surface of the liver free of adhesions. The gall-bladder appeared normal in situation, motility, form, color, and size. Its surface was smooth; the graft was not visible. Histologically the wall was of normal thickness, there being no cicatricial tissue. The vein was scarcely changed. It was covered outside by a layer of cells representing a new serous membrane; on the interior with a connective-tissue and epithelial covering, with a structure exactly like that in the rest of the bladder. It was distinguished from the latter only by fewer folds and

by the absence of lymphatic follicles. The process of regeneration was evidently analogous to that seen in injuries of the cornea. The bladder wall, considering the vein as a sort of middle tunic, had extended its mucous and submucous coats over it and its serous coat under it. Extending from the periphery to the center of the graft this reparation had resulted in a complete *restitutio ad integrum*. The conclusion is drawn from this that vein tissue serves as a perfect graft in the bile passages from the plastic as well as from the functional point of view.

J. DUMONT.

**Carrera, J. A.: Splenectomy in Diseases of the Spleen** (La splénectomie dans les affections de la rate). *Thèses de doct.*, Buenos Aires, 1914.

By Journal de Chirurgie.

This important work discusses splenectomy in all the diseases of the spleen for which it has been performed. Interesting anatomical, physiological, and clinical points bearing on the pathology of the spleen are brought out, but the especially interesting portion of it is the résumé of all the cases published in the Argentine Republic from 1898 to 1913, numbering 27. They may be classified as follows:

Lymphosarcoma.....1 operation with recovery.  
Angiosarcoma.....1 operation with recovery.  
Banti's disease.....2 operations with death.  
Rupture of the spleen....7 operations with 4 recoveries and 3 deaths.  
Injuries of the spleen....2 operations with 1 recovery and 1 death.  
Torsion of the pedicle....1 operation with recovery.  
Malarial splenomegaly....5 operations with recovery.  
Primary tuberculosis....1 operation with recovery.

Leukæmia.....2 operations with death.  
Cancer of the pedicle....1 operation with recovery.  
Hydatid cyst.....1 operation with recovery.  
Splenomegaly.....3 operations with 1 recovery and 2 deaths.

The author advises that the patient be placed in the dorsal position inclined toward the side by the aid of Rio Branco's apparatus. He reviews the different incisions, but does not express a preference for any one, and describes the classical technique for splenectomy. He closes with the advice to lessen the indications for splenectomy as he considers the spleen an important organ.

SALVA MERCADÉ.

## MISCELLANEOUS

**Kellogg, F. S.: Ptosis; a Cause of Gynecological Failure.** *Boston M. & S. J.*, 1914, clxx, 646.

By Surg., Gynec. & Obst.

The author reports four cases typical of ptosis being a cause of gynecological failure. All these patients were operated upon, but they were little relieved. They had symptoms of ptosis when the author saw them. Three of the patients had complained of ptosis previous to operation. They were relieved of all symptoms by mechanical support of the abdomen.

The author enters into a discussion of the diagnosis of this condition and emphasizes the fact that the treatment of uncomplicated ptosis belongs to the orthopedic surgeon. Failure in many cases to secure proper results is due to improperly fitting corsets, insufficient directions, and corsets made of relatively cheap, stretchable material, which stop doing their work in from four to seven days after being fitted.

EDWARD L. CORNELL.

## SURGERY OF THE EXTREMITIES

### DISEASES OF THE BONES, JOINTS, MUSCLES, TENDONS. CONDITIONS COMMONLY FOUND IN THE EXTREMITIES

**Cone, S. M.: Osteomyelitis at the Sacro-Iliac Joint with Gas Bacillus Infection.** *Am. J. Orth. Surg.*, 1914, xi, 389.

By Surg., Gynec. & Obst.

The author reports a case of gas bacillus infection of the ilium around the sacro-iliac joint, in which at autopsy the bacilli were demonstrated in the bone, the muscle and the liver and all the tissues of the body being infiltrated with gas. It is not stated what was the source of the infection in this case but the general statement is made that most of such cases follow an infection of an open wound. The organisms are very seldom found in the blood, and only with great difficulty get into the general circulation. In this case there was necrotic bone at the iliosacral region from which the infection started and progressed insidiously.

W. A. CLARK.

**Klinens, J.: Radiographic Diagnosis of Bone Sarcoma** (Le diagnostic radiographique des sarcomes osseux). *Paris méd.*, 1914, iv, 129.

By Journal de Chirurgie

Radiography not only enables us to make a diagnosis of sarcoma of the bone, but in many cases aids in determining its point of origin and histological structure. Osteosarcomas are divided into two groups: (1) central or myelogenous sarcomas, and (2) peripheral or periosteal sarcomas. All bone sarcomas begin in the diaphysis near the articular cartilage, never in the epiphysis. Radiography shows the integrity of the epiphysis separated from the neoplasm by the solid barrier of the articular cartilage.

Peripheral sarcomas generally involve the periphery only, while the central ones, though they also may develop tremendously just beneath the periosteum, have extended further down, so that the distinction between the two is made, not by the preponderance of periosteal development, but by the



amount of destruction of bone tissue. The periosteum is broken through only in the late stages of the disease. Often a shell impregnated with calcium salts is formed around the tumor; whatever its thickness it shows very clearly on the radiographic plate. Sometimes the neoplasm shows bony trabeculae which tend to limit its growth; the peripheral sarcomas especially show this tendency.

Bone sarcomas may be confused in diagnosis with scorbutus, syphilis, chronic arthritis, and white swelling. Radiography simplifies the differential diagnosis. In scorbutus the terminal surface of the diaphysis shows an opacity greater or less in extent, very intense and irregular in form. This sign is characteristic and often determines the diagnosis without the history or clinical examination. Syphilis may cause more or less destruction of bone by the formation of gummata, but it forms more bone tissue than it destroys, while the opposite is true of sarcoma.

Syphilis of the diaphysis is characterized by retraction of the medullary canal and the abundant formation of bony lamellae. In the epiphyseal form there are clear spots indicating rarefying osteitis, or even small intra-osseous gummata. Chronic arthritis sometimes does not show any appreciable change in the bone; sometimes, as in arthritis deformans, there are numerous small neoplasms at the angles of the patella and at the edges of the particular cartilage where it is continuous with the periosteum. The synovial form of white swelling is characterized by marked swelling of the joint, which is studded with fungosities, shows more or less pronounced decalcification and no destruction of bone; the bony form shows lesions of the trabeculae, limited, at first at least, to the epiphysis.

There are also some sources of error in radiography. The opacity of ossifying sarcomas is sometimes so intense and uniform that all detail is absent and a diagnosis of osteoma might be made if it were not for the history and clinical examination. Some sarcomas escape radiographic diagnosis by the opposite characteristics; that is, by the absence of ossification and destruction of bone. In a case of subperiosteal hæmatoma in a child, resulting from a traumatism of the thigh, Klinens saw a thin but clearly defined shell surrounding the diaphysis of the femur. This shell was formed of calcified periosteum, and microscopic examination of it showed there was no sarcoma present. In the majority of cases the radiographic picture of osteosarcoma is pathognomonic, but there are cases where a definite conclusion is impossible.

J. DUMONT.

**Dax, R.: Paget's Bone Disease** (Über Pagetsche Knochenerkrankung). *Beitr. z. klin. Chir.*, 1914, lxxxviii, 641.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Paget's disease, or *ostitis deformans*, is a disease of advanced age, which progresses slowly and generally causes no other disturbance than that

produced by the deformity of the skeleton. It generally begins in the skull and then affects in succession the tibia, femur, pelvis, spinal column, clavicle, ribs, humerus, and radius, frequently symmetrically but sometimes unilaterally. The bones become larger and softer, bent and misshapen. The spinal column shortens so that the height is decreased. The diaphyses of the long bones are affected, the joints are not. The form of the body, with its enormous skull and the apparently elongated arms reaching to the knees, resembles that of the anthropomorphous apes. There are often pains in the diseased bones — rheumatic, gouty or neuralgic in nature, without periodic or nightly exacerbations.

The complications are those to be expected at the age at which it occurs: arteriosclerosis, atheromatosis, ulcers of the leg, heart affections, lung diseases caused by the limitation of the respiration, and very frequently multiple malignant tumors of the bones. Spontaneous fractures are rare, in contrast with fibrous ostitis.

Histologically, there is diffuse destruction of the bone-marrow with fibrous transformation, widening of the haversian canals, decrease in the lamellae, with destruction and new formation of bone substance, the former exceeding the latter in degree. The disease has been attributed to heredity, trauma, gout, rheumatism, changes in the nervous system, the influence of the glands of internal secretion, senility and hereditary syphilis, but as a matter of fact, the etiology is unknown. There is great similarity to fibrous ostitis, but in the latter disease there are cysts and tumor formation, while in Paget's disease there are only fibrous foci in the bone. Treatment has been without effect except in one case that was treated successfully with calcium lactate. The author in conclusion gives the history of a typical case of his own in a woman 70 years old.

SCHULTZE.

**Hartung, A.: Some Unusual Bone Lesions.** *Am. J. Röntgenol.*, 1914, i, 201.

By Surg., Gynec. & Obst.

The author reports 2 cases of *osteitis fibrosa deformans* (Paget's disease); one case of *osteitis fibrosa* or multiple bone cyst, and 3 cases of *hyper-trophic osteo-arthritis* of Marie.

In the cases of Paget's disease there was, grossly, bowing and enlargement of the long bones and hyperostosis and thickening of the flat ones. The minute changes showed a coincident porosis and sclerosis, one or the other processes predominating in different parts. The fine markings ordinarily shown in the cancellous ends of the long bones were replaced by a coarse trabeculation which extended into the shafts. In some cases the process simulated periosteal thickening; in others, irregular decalcification gave an appearance of caries. Near the distal end of both the ulnae and radii of one case, uniform absorption of lime salts of a limited area had occurred, resembling cyst formation. In the tibiae of



both cases the lumen of the medullary canal was practically obliterated, having been replaced by irregular lamellæ of bone.

With the exception of the spine, the joints were not involved. The process extended throughout the epiphyses, but there was no noticeable irregularity of the joint surface, nor was there anything suggestive of atrophy of the joint cartilage.

The skulls of both patients showed well marked and similar changes. The calvarium was markedly thickened, especially at the base, and an abnormal porosity in places gave it a marked mottled effect. The sella turcica were found to be about normal.

The case of osteitis fibrosa showed a cystic condition in both clavicles, some of the ribs, both tibiae, one fibula, and one of the metatarsals. Fractures had occurred in both humeri and in both femurs. Most of the tumors showed a localized decalcified area with compartments, surrounded by a thin, expanded shallow bone. In the right tibia a late picture shows this shell apparently broken and the growth has all the X-ray appearance of sarcoma.

Of the 3 cases of osteo-arthropathy of Marie, one was tubercular, one clinically tubercular with negative Von Pirquet and Wassermann, and one had a clinical diagnosis of probable Hanot's cirrhosis; the lungs were negative. These cases each showed an osteoperiostitis, always most marked over the metacarpals and metatarsals, next in degree at the distal ends of the ulnæ, radii, tibiae, and fibulae. A similar process extended along the long bones near other bones affected, a condition not shown in the description of other cases recorded. Joint surfaces were not found to be involved and clubbing at the ends of the fingers and toes was not accompanied by bone changes.

D. R. BOWEN.

**Landois, F.: Central Surgical Bone Disease** (Über zentrale chirurgische Knochenerkrankungen). *Med. Klin.*, Berl., 1914, x, 269.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

With the aid of the röntgen picture it is frequently possible to diagnose bone diseases that cannot be differentiated clinically. The author discusses the diseases of the center of the bone that have been recognized thus far. The red lymphatic marrow of youth changes gradually into fat marrow. This is important in the prognosis of fractures at an advanced age, for fat embolism is seldom observed in children. But different influences, such as long rest in bed, bandages, etc., may cause the bone to atrophy, the cortex becomes thin, the structure looks transparent and spotted in the röntgen picture, and the red marrow is transformed into fatty marrow; the protection against embolism has disappeared. On the other hand, the lymphatic marrow, poor in fat, has certain dangers. On account of the presence of numerous blood-vessels in the marrow cavity there is a predisposition to severe bone diseases, since it has been bacteriologically demonstrated that the bone-marrow in most acute infectious diseases contains bacteria.

Sometimes there is a phlegmon of the marrow. Here diagnosis is comparatively easy; it is more difficult in the chronic forms of osteomyelitis. If there is a cyst with round, smooth walls it may be tuberculosis or coccus osteomyelitis, although generally in the latter there is new formation of bone because of irritation of the periosteum, which is generally lacking in tuberculosis which leads to caseation. In bone syphilis we have multilocular cysts or large granulation tumors originating from the periosteum.

There is a short discussion of actinomycosis and echinococcus. Multilocular cysts are also found in fibrous ostitis, while solitary ones are found, among other diseases, in myelogenous giant-celled sarcoma. Myelomata also originate from the marrow, and sometimes also chondromata when there are small islands of cartilage from the embryonic period remaining in the marrow, but these are easily recognized in the röntgen picture by their nodular structure. Cartilaginous exostoses owe their origin to similar islands of cartilage. Osteomata, fibromata, and myxomata occur more rarely. There is no primary carcinoma of the bone; at most an epithelial cancer may arise in bone from proliferation of skin or mucous membrane in fistulae leading into the bone.

Cholesteatomata of the astragalus are interesting from the point of view of the history of development, as are also dermoids of the frontal cavity, adamantomata, etc. Not all of these diseases are satisfactorily explained; many problems still await solution, as for example, the fact that certain carcinomata, cancer of the breast and prostate, have a special tendency to produce metastases in bone-marrow, as do also hypernephromata, Grawitz' tumors of the kidney, and malignant goiter.

KNOKE.

**Mayer, L. and Wehner, E.: Importance of Individual Components of Bone Tissue in the Regeneration and Transplantation of Bone** (Neue Versuche zur Frage der Bedeutung der einzelnen Komponenten des Knochengewebes bei der Regeneration und Transplantation von Knochen). *Arch. f. klin. Chir.*, 1914, ciii, 732.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In experiments on dogs, freely transplanted periosteum and periosteum after subperiosteal resection of bone reproduced bone, while there was no growth when the periosteum was removed from the surface of the transplanted bone. In bone transplantation the bone-cells showed no new formation of bone, while the periosteum was active in this respect and also the endothelial cells of the marrow cavity and the haversian canals. Bone that is macroscopically free from periosteum can be transplanted because it retains the osteoblasts of the cambium layer and the endothelial cells of the marrow cavity and the haversian canals.

From these experiments it follows that in man the bone must always be transplanted with its periosteum or at least with as much of the cambium



as possible. A part of the transplanted bone dies, another part lives until the transplant is vascularized. The dead bone is partially dissolved by the young bone-cells which form new bone at the same time, which is gradually substituted for the old and penetrates into the old empty bone cavities.

KIRSCHNER.

**Walther, H. W. E.: Gonorrhœal Metastatic Arthritis.** *Boston M. & S. J.*, 1914, clxx, 561.

By Surg., Gynec. & Obst.

The author reviews some of the more recent literature concerning metastatic gonorrhœal arthritis. Infection of this type usually takes place after the acute urethral manifestations, although this is not always the rule, two cases cited occurring in from 13 to 21 days. Thirty per cent involve one joint, 70 per cent are polyarticular. The knee, ankle, and wrist joints are most commonly involved.

The types of infection are:

1. Arthralgia without definite lesions in the joint.
2. Acute serous synovitis with much periarticular swelling.
3. Acute fibrinous and plastic synovitis with slight effusion.
4. Chronic serous or purulent synovitis.
5. Involvement of bursæ and tendon sheaths.

Treatments consisting of injection of 2 per cent formalin and glycerine; seminal vesiculotomy; actual cautery; blood-letting; aspiration and the usual applications; prostatic massage; Bier's bandage; lead and opium; ice caps; packs; saturated solution of magnesium sulphate and ichthyol, are recommended. Serotherapy and vaccine therapy are yet of doubtful value. Autogenous vaccines appear more efficient.

Surgically the infection has been treated with more or less success by (1) aspiration; (2) aspiration and antiseptic injection; (3) incision, irrigation and drainage; and (4) seminal vesiculotomy.

The latter has not been accepted by most conservative surgeons, but if the focus lies in the seminal vesicles, the present trend will probably demand its more common use.

H. W. MEYERDING.

**Lehmann, E.: Post-Traumatic Ossification in the Region of the Elbow-Joint** (Posttraumatische Ossifikationen im Gebiete des Ellenbogengelenks). *Deutsche Ztschr. f. Chir.*, 1914, cxvii, 213.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The first cases of myositis ossificans that were observed in the region of the elbow-joint were all in connection with posterior dislocation and so were regarded as a consequence of that injury. Machol in 1908 and others afterward assumed that the replacement of a posterior dislocation as a rule caused a circumscribed ossification in the musculature of the elbow. But even if such a connection exists, the author believes that there must be other factors of a more general nature producing ossi-

fication, for it has been found after other injuries than dislocation and has been lacking in dislocations of other joints, as it is found only very rarely in any other joint.

The author has collected 37 cases of ossification of the elbow-joint from 1902 to 1910 and publishes the case histories. The röntgen pictures are very interesting and all of them show bone proliferation in the brachialis anticus, and some of them at the insertion of the triceps from the size of a cherry up. The epiphysis and sometimes also the diaphysis of the humerus was surrounded by masses of callus. By no means all of these appeared after dislocations; in fact, posterior dislocation occurred in only 19 cases; some of them came after fractures or even simple sprains. There was always a trauma of some sort, though in some cases it was very slight.

Lehmann does not answer the question of whether the bone proliferation originated in the muscle or periosteum, because the osteoblastic form, originating from periosteum, and the metaplastic, originating from connective tissue, appeared side by side. But there was certainly some purely intramuscular proliferation of bone, without participation of the periosteum. As evidence, he cites the röntgen pictures and the findings on operation, where bone and periosteum were found completely intact.

Several factors are brought forward as possible causes of the ossification of the soft parts: first, that the anatomical form of the elbow with its various projecting ends of bone renders it specially liable to mechanical injury; hæmorrhage plays a certain part in the formation of new bone and also the synovial membrane. But there is still the question of why ossification should occur so often in the elbow and not in other joints. It cannot be explained without the hypothesis of individual predisposition.

As to clinical course and diagnosis the author, with others, believes unreservedly in conservative treatment, for these bone proliferations tend to disappear spontaneously. It is especially important in treating recent injuries to avoid all forced movements. The prognosis depends on the kind of proliferation, its size and location, and its capacity for absorption.

KNOKE.

**Leonhard: Treatment of Tuberculosis of the Shoulder-, Elbow-, and Wrist-Joints and Its Results** (Über die Behandlung der Tuberkulose des Schulter-, Elbogen- und Handgelenks und ihre Erfolge). *Beitr. z. klin. Chir.*, 1913, lxxvii, 125.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author collected the results that have been obtained for the past 19 years at Garre's clinic in the treatment of tuberculosis of the upper extremity. Of 145 cases treated, 25 were tuberculosis of the shoulder-, 79 of the elbow-, and 41 of the wrist-joint. The treatment was individualized according to the anatomical location and the function of the joint. The average age of the patients with shoulder-joint tuberculosis was 27.3 years.

In the etiology, the disease was reported as spon-



taneous in 17 cases, due to trauma in 8, and hereditary taint in 3. The diagnosis may be confused with osteomyelitis, syphilis, and arthritis deformans. In 31.5 per cent of the cases the disease was in the humerus alone, in 10.5 per cent in the articulation between the clavicle and acromion process, in 11 per cent in the glenoid cavity of the scapula, and in 47 per cent the whole shoulder-joint was involved. There was caries sicca in 12 per cent.

The treatment was conservative, consisting of injections, Bier's hyperæmia, hot air, and rest. If this was not successful excochleation or even resection was performed. Eight cases were treated conservatively, excochleation was done in 5, and resection in 12.

The author comes to the conclusion that the resected cases gave the best permanent results. The etiological factors were the same in tuberculosis of the elbow-joint as in the shoulder-joint. The entire joint was involved in 60.3 per cent of the cases.

Garré believes that in children it should be treated conservatively by placing the arm at rest in the right-angled position, while in adults resection should be performed. Resection was performed in 34 cases and the immediate and late results were the best in these cases. Excochleation was performed 20 times and 5 of these cases recovered completely. Amputation was performed in 4 cases.

Of 40 cases of wrist-joint tuberculosis which were treated, 22 were in males and 18 in females. The right hand was chiefly involved in the males. The males were attacked with tuberculosis of the wrist-joint at a more advanced age than in the other two joints. The treatment was as conservative as possible and when operation was performed the neighboring tissues were spared whenever feasible, only the diseased tissue being removed and conservative after-treatment given. In tuberculosis of the wrist-joint no really satisfactory results were obtained, either immediate or late, nor was the function restored, so that tuberculosis of this joint offers the worst prognosis of all the forms of joint tuberculosis both as to life and function.

VORSCHÜTZ.

**Allison, N.: Tuberculosis of the Hip; an Analysis of Twenty-Five Selected Cases.** *Tr. Am. Orth. Ass.*, Phila., 1914, June. By Surg., Gynec. & Obst.

The purpose of the article is to consider the relative value of prolonged traction and prolonged fixation in tubercular hip disease. The literature is briefly reviewed. Bradford's traction splint was used on fourteen cases and fixation plaster of Paris spicas on eleven. These cases are reported after a sufficient period of time has elapsed to justify the conclusion that the disease process has healed and the results obtained are ultimate, in so far as the hip is concerned. The cases are studied from the standpoint of shortening, motion, and deformation. The results are checked by frequent radiograms.

The average shortening where plaster of Paris spicas were used was 1.45 inch; where the Bradford

traction-abduction splint was used it was .56 of an inch. Where plaster of Paris spicas were used the average atrophy of the thigh was 1.47 inch, and of the calf one-half inch; where the Bradford traction-abduction splint was used the average atrophy of the thigh was 1.27 inch and of the calf .76 of an inch. From this latter observation the conclusion may be drawn that the use of traction does not materially increase the amount of atrophy. Motion was preserved in all the hips treated with traction-abduction splint and was lost in 60 per cent of the cases treated with plaster of Paris spicas.

The author is led to conclude further that in any treatment given tuberculosis of the hip it is essential that the case under treatment be very carefully watched. This is most easily done where it is necessary to observe the case frequently, a condition made necessary by the care of the traction splint.

Abscesses have occurred in 33⅓ per cent of the cases treated with plaster of Paris spicas, and in 40 per cent of the cases treated with traction-abduction splints.

**Rogers, M. H.: Tuberculosis of the Knee in Adults; Prognosis and Treatment.** *Tr. Am. Orth. Ass.*, Phila., 1914, June.

By Surg., Gynec. & Obst.

The author reports the cases of tuberculosis of the knee in adults at the Orthopedic Clinic of the Massachusetts General Hospital during the last fourteen years. He compares the nature of the disease and the results of treatment with similar statistics from certain children's clinics.

One hundred consecutive records of tuberculosis of the knee were studied to ascertain the results of the most common form of treatment, fixation by means of plaster of Paris bandages, there being no record of a case cured by the conservative method.

Twenty-six cases were studied very thoroughly during the last four years, all of them being subjected to operation, and it was found that as far as can be proved clinically, all but one case had its origin in the synovia, which is contrary to the ordinary conception that tuberculosis starts near the epiphysis and extends to the capsule secondarily.

The conclusions as to treatment are that conservative methods do not show good results; that excisions when performed after there is marked destruction of the joint cause a slow convalescence; that better results will be obtained if an excision is done as early as the diagnosis can be made positively; that it is often necessary to perform an exploratory arthrotomy to make a positive diagnosis.

**Hayem, L.: Penetrating Injuries of the Knee-Joint** (Les plaies pénétrantes de l'articulation du genou). *Thèses de doct.*, Par., 1914. By Journal de Chirurgie.

The author's work considers only injuries to the knee in civil life. They are more serious than is generally believed and of the cases considered in this thesis not one escaped surgical intervention. The functional result was certainly better in the



cases operated upon early. The three deaths were in patients operated on late, from the fourth to the tenth day. In one case there was resection of the knee with recovery; all the others were treated by extensive arthrotomy. The conclusions reached are:

In slight joint injuries, immediate arthrotomy should be performed if there is a foreign body; arthrotomy within the first twenty-four hours if there is distention of the synovial sac; in other cases the surgeon should be ready to intervene at the first sign of joint infection.

2. In large injuries drainage should be freely used after excision of the contused tissues.

3. In case of persistent suppurative and aggravation of the general condition, resection of the knee-joint should be performed without hesitation.

LÉON IMBERT.

### FRACTURES AND DISLOCATIONS

**Moore, J. E.: Fractures of the Neck of the Femur.**  
*Old Dominion J.*, 1914, xvii, 133.

By Surg., Gynec. & Obst.

The author advocates very warmly the so-called anatomical method of Maxwell of treating fractures of the hip. He states that Maxwell, Ruth, Whitman, and others have demonstrated the fact that fractures of the neck of the femur can be treated about as successfully as those of the shaft and that the practically hopeless prognosis as to function given in most textbooks is based on the results of the older methods of treatment.

The reason for the failure of the old methods lies in the fact that the fragments are not brought into apposition. Maxwell's method in brief consists in adding a side pull to the Buck's extension, the result of the two pulls being a pull outward in the long axis of the neck of the femur, thereby rendering the capsule tense and bringing the fragments into proper relation.

The method allows full control of the limb so that the tendency to eversion may be easily corrected. Slight flexion movement of the knee is possible which in older people is of especial advantage in preventing ankylosis. The patients are allowed and encouraged to sit up in bed and there is no danger of disturbing the fragments because the head rotates in the acetabulum. This adds much to the comfort of the patients and prevents hypostatic pneumonia. The author believes that while Whitman's method of extreme abduction and retention in plaster is undoubtedly the best for children, Maxwell's method is to be preferred for adults because it is more comfortably and conveniently applied.

F. J. GAENSLER.

**Scott, H. A.: A Treatment of Fractured Femur.**  
*J. Okla. St. M. Ass.*, 1914, vi, 462.

By Surg., Gynec. & Obst.

The treatment of fractures of the femur by means of Brown's modification of the Hodgkin splint is described. The splint is recommended because it

is cheaply and easily made; it is easy to apply and keep in order; it is comfortable for the patient; and the results are perfect in almost every case. The patient sits up in bed from the time the splint is applied. The author especially recommends its use in the treatment of intracapsular femur fractures.

A Buck's extension is applied to the leg and attached to the distal end of the splint. This holds the leg well down in the splint and is also the means of applying traction. The splint containing the leg is suspended from the ceiling so that it hangs freely at all times. By adjusting the straps or cords the eversion is slightly overcorrected and the longitudinal axis of the leg is preserved. Abduction is produced by pushing the bed to one side. R. O. RITTER.

**Parthenay, C. de: Treatment of Fractures of the Leg by the Ambulant Method** (Contribution à l'étude du traitement des fractures de jambe par la méthode de marche directe). *Thèses de doct.*, Par., 1914. By Journal de Chirurgie.

The author reviews the various methods of treating fractures of the leg, with special consideration of the ambulant treatment. He describes in detail Guillot and Boissière's bivalve apparatus and Delbet's apparatus. The advantages of the former are its removability, the possibility of dressing the wound of an open fracture, and the possibility of removing the apparatus at night, about the twentieth day; also the possibility of giving the patient other treatment, such as massage, electricity, and hot air, and the fact that a sufficient degree of pressure can always be preserved, by tightening the crepe bands, even after the disappearance of the oedema.

The simplicity of Delbet's apparatus is emphasized. It can be applied in most fractures of the leg, even when low down; it permits inspection of the site of the fracture but has to be changed two or three times as the oedema decreases. Twenty-three cases of fracture of the leg treated by this method are reported, 16 of them with Delbet's apparatus. Unfortunately the histories are too brief to be valuable as statistics. Six of the cases were fracture of the tibia in children from 6 to 16, with very little displacement. In 7 cases Guillot and Boissière's apparatus was used; one was a compound fracture of both bones of the leg, but the apparatus was applied only 6 months after the accident because a fistula persisted. The other 6 cases were oblique fractures of the tibia with fracture of the fibula, but with little or no displacement. The apparatus was applied soon after the accident and the results were satisfactory, the patients being able to resume their work very soon. L. CAPETTE.

**Anzilotti, G.: Study of Anterior Dislocation of the Head of the Radius** (Contribution à l'étude des luxations antérieures de la tête du radius). *Riforma med.*, 1914, xxx, 289. By Journal de Chirurgie.

The first case reported was a recent forward dislocation of the head of the radius. A boy of 8,



while carrying his little brother on his back, fell and struck on his elbow. Examination an hour later showed: (1) Decrease of the transverse diameter; (2) increase in the anteroposterior diameter; (3) the bony projection of the head of the radius could be felt and movements of the diaphysis communicated to it; (4) complete extension was impossible, and flexion could not be carried to more than a right angle. Radiography confirmed the diagnosis of dislocation without fracture of the ulna. Reduction was easy by hyperextension and traction on the forearm while the head of the radius was pushed toward its cavity. There was slight compression on the head of the radius and immobilization in a position of extension. There was such severe pain in the forearm that it was necessary to open the apparatus. A diagnosis of radial neuritis was made, which was overcome by massage, hot baths, and electrical treatment. Radiography 10 days later showed good reduction.

The second case was an old dislocation of the head of the radius. A boy of 7 had fallen with his arm in forced extension a year before. When he entered the hospital there was valgus of the elbow to 155 degrees; a spherical tumefaction which was the head of the radius; limitation of extension; flexion was possible barely to a right angle. Radiography confirmed the diagnosis. The head of the radius was resected and the arm immobilized in extension for 12 days. The result was excellent, as flexion and extension became normal.

The author emphasizes the possibility of injury to the radial nerve. In old luxations he thinks the new joint that is formed often permits almost all the necessary movements without any operation. In recent dislocations radiographs should always be taken. He believes that reduction should be maintained by immobilization in extension and moderate supination. At the same time there should be slight pressure on the head of the radius. If this is not sufficient open operation must be performed. In old dislocations the operation of choice is conservative resection, which gives good results and allows the development of the function of the joint.

CH. VILLANDRE.

**De Smeet: An Unusual Luxation of the Metacarpals** (Une luxation rare des métacarpiens). *Ann. soc. de méd. de Gand*, 1913, iv, 437.

By Journal de Chirurgie.

De Smeet describes a curious lesion which he has not found described anywhere in medical literature and which he therefore considers, if not unique, at least extremely rare. A man of 25 had been treated for an open fracture of the middle third of the leg by careful disinfection with tincture of iodine, immobilization, and massage. He had left the hospital at the end of three weeks apparently completely cured but returned about three weeks later. He walked perfectly, as well as before the accident, but he complained of a painful sensation in the sole of the foot at the head of the third metatarsal. The

pain was not very acute and was produced by pressure of the foot on the ground.

Upon examination, it developed that the patient had had another injury which had not attracted the least attention during his stay in the hospital. There had been complete luxation of the fifth and seventh metacarpals, one under the other inwards, and fracture of the head of the third metatarsal. Radiography confirmed these facts. A very remarkable feature was that while the metatarsals were displaced inwards the phalanges of the toes were in an absolutely normal position. The lesions seemed to indicate that the foot had suffered considerable violence at the external surface of the row of metatarsals, while the toes were fixed in some fashion so that they could not follow the impulse.

The patient had never complained of his foot; all the manipulation in reducing the fracture had not caused any pain in that region, although the physician who cared for him at the time of the accident said that his shoe had been torn into shreds. The author has him under observation and if the pain increases, a greater or less part of the dislocated metatarsals will doubtless have to be resected.

J. DUMONT.

**Feldmann, A.: A Case of Central Luxation of the Femur** (Ein Fall von Luxation femoris centralis). *Dissertation*, Halle, 1913. By Journal de Chirurgie.

Central dislocation of the femur—that is, the penetration of the head of the femur through the perforated acetabulum into the pelvis—is one of the rarest dislocations of the hip-joint. In all cases it is caused by great violence. It is purely traumatic. The first symptom is the position of the hip on the affected side.

In the author's case there was flexion and outward rotation. In other cases the position is different. Sometimes abduction and outward rotation, sometimes adduction and outward rotation. In all cases there is outward rotation. Replacement is typically easy and generally not very painful, but after the cessation of the force that has restored the leg to position it slowly settles back into the faulty position. Treatment in uncomplicated central dislocation consists chiefly in replacing the displaced head of the femur. The prognosis should be guarded.

FRITZ LOEB.

## SURGERY OF THE BONES, JOINTS, ETC.

**Morestin, H.: Disarticulation of the Hip with Resection of the Acetabulum in Old Cases of Coxalgia** (Disartéculatíon de la hanché avec résection du cotyle dans les vieilles coxalgies). *Bull. et mèm. Soc. anat. de Par.*, 1913, xv, 508.

By Journal de Chirurgie.

The author reports two cases of resection of the hip and acetabulum in two patients, one of whom had had a fistulous coxalgia for 14 years; the other for 10 years had had a coxalgia, which had apparent-



ly recovered but had recently been complicated by a fracture of the femur. In both cases function was destroyed and the diseased limb was troublesome and dangerous.

The operative technique was practically the same in both cases. The limb was placed in a position of flexion, adduction, and internal rotation and a racquet-shaped incision made with the handle of it externally, beginning in the posterior part of the iliac fossa and descending to the trochanter or a little below. The body of the racquet was almost transverse, and passed inside at a little distance from the perineal groove. The section of the soft parts was made from behind forward. The chief difficulty encountered was in the femoral ankylosis. After section of the periarticular adhesions great force was necessary to free the head of the femur from the pelvis. The violent blows that were necessary produced symptoms of shock in the patients, who grew pale, the pulse became feeble and then imperceptible. The operation was completed by resection of the acetabulum with the saw, scissors, and hammer and especially the gouge forceps, which avoided the necessity of any further shock. The results were excellent, not only in these 2 cases but in 3 others operated upon by the author.

P. MASSON.

**Rogers, J.: Autogenous Bone-Grafting for Fracture of the Patella.** *Ann. Surg.*, Phila., 1914, lix, 483.

By Surg., Gynec. & Obst.

Rogers reports two cases of fracture of the patella treated by bone transplantation, the bone-graft, one and one-half inches by three-fourths inch by one-eighth inch thick with periosteum, being obtained from the patient's own tibia on the affected leg. This bone was placed longitudinally bridging the fractured line in the patella. In one case after eight weeks there was an apparently perfect result and in the other the result seemed perfect after a splint had been worn for six weeks.

M. S. HENDERSON.

**McWilliams, C. A.: Methods Suggested for Bone Transplantations.** *Ann. Surg.*, Phila., 1914, lix, 465.

By Surg., Gynec. & Obst.

McWilliams reports that in a series of experiments every graft covered with periosteum lived, while of twenty-five grafts made without periosteum only 48 per cent lived. He concludes that the blood supply is the all-important feature and that inasmuch as the periosteum plays an important part in the blood supply it should always be preserved. Minute fragments of a living graft transplanted without the periosteum by his experiments are successful in 50 per cent of cases. The same amount of bone in one large piece deprived of its periosteum, McWilliams says, would not be so apt to live. He says periosteum alone when transplanted into soft parts may produce living bone. He thinks Macewen and Murphy are mistaken in their conceptions of the

lack of function of the periosteum in maintaining the life of the grafts.

The remainder of the paper is interesting but does not readily permit of abstracting. Under the head of general principles he emphasizes the necessity of asepsis, autogenous transplantation, avoiding the introduction of wires, nails, screws, etc., where possible, and absolute fixation of the limb for five months. Technique and cases from the literature are cited to prove the points. M. S. HENDERSON.

**Serafini, G.: An Attempt to Replace the Upper Extremity of the Humerus by a Graft of Dead Human Bone, in a Case of Resection for Sarcoma** (Considérations sur une tentative de remplacement de l'extrémité supérieure de l'humérus par une greffe humaine d'os mort dans un cas de résection de l'extrémité supérieure de l'humérus pour sarcome). *Policlin.*, Roma, 1914, xxi, 23.

By Journal de Chirurgie.

Five cases are reported in the literature of bone-grafts to replace parts of the humerus resected for various kinds of tumors. Lesur's case is the only one of these that was successful; the patient recovered, the graft was well borne and the shoulder function was preserved. In the 4 other cases the graft was discharged or had to be removed. This new case of Serafini's is therefore of great interest.

A young man of 16 had a round-celled sarcoma near the surgical neck of the humerus, but the shoulder-joint was intact. Bajardi resected 17 cm. of the humerus, including the head of the bone; the incision was carried into tissue that was apparently normal, about three finger-breadths below the tumor. This long segment of humerus was immediately replaced by a piece of the same length which was fixed to the distal end of the humerus by bone wedges. It had come from the body of a man of 60 with cirrhosis who had died from surgical shock 27 hours before. It had been removed carefully; the skin of the arm was disinfected with tincture of iodine and the same precautions exercised as in an operation on a living subject. The bone was rapidly removed with its periosteum, the marrow extracted with a curette, the bone immersed in Ringer's solution and kept at a temperature of 2° C. It was used three hours after removal. Cultures had been made to prove that the periosteum and marrow were perfectly sterile. The tendon of the pectoralis major was reinserted on the graft.

The patient bore the operation well; the wound healed by first intention; in the first 12 days the temperature varied from 37.3° to 39.2°, the pulse between 86 and 120. The graft seemed to have taken and on the twenty-seventh day the limb was moved. A fistula opened at the lower part of the incision on the twenty-ninth day from which a purulent liquid was discharged. The patient left the hospital the thirty-fifth day with the fistula persisting. He returned five days later with the fistula closed but with a recurrence of the sarcoma in the remaining segment of the humerus and



metastases. He died the eighty-fifth day. Radiographs taken the thirtieth day showed rarefaction of the spongy tissue of the graft. Autopsy showed that the graft was dead; it was surrounded by a thick, grayish connective-tissue membrane, but there was no reunion between the two segments of the humerus; there was no trace of callus. Under the microscope there were undoubted signs of necrosis.

PIERRE FREDET.

**Henderson, M. S.: The Treatment of Ununited Fractures of the Tibia by the Transplantation of Bone.** *Ann. Surg., Phila.*, 1914, lix, 486.

By Surg., Gynec. & Obst.

Nine cases of ununited fracture of the tibia are reported, one recent, but in the remaining 8 cases sufficient time had elapsed since the operation to give a perfect functional result. All were males. Syphilis was ruled out in all but one case and that was contracted after non-union had existed for one year.

The inlay and not the intramedullary method was used in all the cases, and is advised as a more anatomical operation. All healed without sepsis though in two cases slough of the old scar caused an ulcer which stayed clean and granulated over. It would seem as if the transplanted bone observed by subsequent X-ray pictures lives and functionates without being replaced by new bone when implanted by the inlay method, for then there is periosteum of the graft to periosteum of the shaft, and cortex to cortex, and medullary lining to medullary lining. A piece of cortical bone placed in the medulla is slowly absorbed, for here it is practically a foreign body.

The technique is simple. Either by the aid of the chisel or the motor-propelled circular saw, a piece of bone is removed from the internal flat surface of the tibia. The bone should be of sufficient length to make a substantial bridge, usually 2 or 3 inches long and about one-half inch wide, and should include all the layers. This is taken from the longer fragment. A piece the same width in the same line is then removed from the smaller fragment. This is saved. The larger piece of transplant is then inverted so that sound bone will bridge the line of fracture. The part which was the upper end fits into the angle distal to the fracture in the smaller fragment. The piece removed from the smaller fragment is then used to fill the remaining gap in the longer fragment. Both pieces are sewed in by stitching the periosteum of the transplant to the periosteum of the shaft. The skin is then closed with silk worm and horsehair and the dressing applied. A plaster of Paris cast is applied to include the knee and ankle. This is removed at the end of two weeks; the sutures are removed and a new cast put on which is left from four to six weeks.

Further treatment is guided by the individual needs. Union is usually firm enough to permit walking in from 3 to 6 months.

**Robinson, E. F.: Treatment of Ununited Fractures of Tibia by Intramedullary Bone Transplants; Report of Five Cases.** *Ann. Surg., Phila.*, 1914, lix, 495.

By Surg., Gynec. & Obst.

Within the last year Robinson has successfully treated five cases of ununited fracture of the tibia by bone transplantation. In giving the possible cause of non-union he advances the theory that a thrombus forms in the nutrient artery of the tibia. This non-union is more likely to occur, he thinks, in the upper or middle third, for the nutrient artery enters this area. In consequence of this impaired nutrition the process of bone repair is so delayed that connective tissue is interposed and forms a permanent block to the bridging across the gap by the Haversian system of osteoblasts. He thinks that the transplant acts as an osteoconductive structure, and he saves the periosteum where possible. He has used the intramedullary method in all the cases, first freshening up the ends of the fracture and reaming out the medulla. He reports bony union in one case in less than a month; in another, bony union at the end of seven weeks, and another at the end of twelve weeks. Autogenous transplants were used, and all were obtained from the opposite tibia.

M. S. HENDERSON.

**Lovett, R. W.: The Use of Silk Ligaments in Paralysis of the Ankle.** *Tr. Am. Orth. Ass., Phila.*

1914, June.

By Surg., Gynec. & Obst.

In view of the contradictory statements with regard to the value of the silk ligament in cases of infantile paralysis causing foot-drop, 79 operations performed at the Children's Hospital, Boston, from the years 1907-1913 inclusive, were analyzed from the view of the end-results. The end-results were considered as valid only after the lapse of a year after operation.

An analysis of these figures showed that occasional infection had occurred, but not since 1911, and that this trouble had occurred with all methods of preparation of silk, so that it was not fair to attribute it to the use of silk prepared by any one formula, but to some difference in the technique of the individual operator.

The percentage of success seemed to be largest in the cases where the bone was drilled, and this operation seems to be preferable to that where a periosteal insertion of the silk only is aimed at.

Cases are kept in plaster for from three to six months, and in a retention shoe until a year after operation. It seems probable that many failures occur from allowing the unsupported weight of the foot to come too soon on the silk. It must be remembered that the silk is intended not as a supporting structure in itself, but merely to serve as the core for a ligament, which is the real supporting structure.

The conclusion is presented that the operation is a useful one in properly selected cases, and in the majority of cases the results are satisfactory.



## ORTHOPEDICS IN GENERAL

**Geist, E. S.: The Use of Celluloid Foot-Plates.**  
*Am. J. Orth. Surg.*, 1914, xi, 398.

By Surg., Gynec. & Obst.

The author following an idea obtained at Lange's clinic in Munich uses celluloid for arch supports.

The thick celluloid solution in commercial acetone is applied over a plaster model of the foot alternately with heavy tape and steel strips, the latter placed longitudinally. After twenty-four hours it is dry and is removed and trimmed. It is claimed for such plates that they are light in weight, inexpensive, easily made, and fit accurately. W. A. CLARK.

## SURGERY OF THE SPINAL COLUMN AND CORD

**Adams, Z. B.: The Relation of Bony Anomalies of the Lumbar and Sacral Spine to the Cause and Treatment of Scoliosis.** *Tr. Am. Orth. Ass.*, Phila., 1914, June.

By Surg., Gynec. & Obst.

The paper is founded on statistics from the routine clinic of scoliosis at the Massachusetts General Hospital. An inspection of the X-ray plates shows that 6 per cent of this series, being infantile paralysis, had symmetrical sacra, with the spine sagging from the top, due to the letting off of the stays of one side of a compound mast; 6 per cent were due to lesions in the dorsal spine, bifid bodies, etc., and showed symmetrical sacra, with the lumbar spine sagging and rotated; 88 per cent showed congenital defects in the sacrum or low lumbar vertebra. These defects were due to errors in fusion or development of the centers of ossification or of their processes.

From this study it is concluded, among other things, that a careful X-ray investigation is essential before any attempt at treatment of lateral curvature. In each case the mechanics of this part of the spine should be carefully considered, for anomalies of this region are frequent without any scoliosis.

The study also shows that, in some cases, correction cannot be obtained until the bony obstacle to such correction has been removed; that in many other cases an operation must follow correction in order to obtain and maintain a stable base on which the spine may rest.

In the early cases exercises should be directed to reducing the anterior lumbar lordosis, thus diminishing the downward inclination of the upper surface of the sacrum, and to maintaining a flat back position in standing and a round back position in sitting.

**Osgood, R. B. and Bucholz, C. H.: An Apparatus for Obtaining True Comparative Photographic Records of Scoliosis.** *Tr. Am. Orth. Ass.*, Phila., 1914, June.

By Surg., Gynec. & Obst.

The authors have been impressed with the lack of true comparative photographic records of scoliosis. They realize that any apparatus must be simple, universally applicable, and cheap, in order to meet the demands of hospital and private work. They have devised a frame consisting of two upright posts firmly fixed in a base board, on the front of which are painted feet and inches. On each of these posts slide two horizontal bars extending backwards, the upper and lower pair of which are connected at

the back by a cross bar. On the cross bar connecting the two horizontal bars and on the horizontal bars are adjustable pelots.

The patient stands on the base board in the space enclosed by the horizontal bars and their connecting cross bars. The horizontal bars and pelots are then adjusted so that for a back view the pelots of the lower connecting bar touch the anterior superior spines and the pelots of the upper bar touch the shoulders. The pelots always extend an equal distance from the bars and therefore a view of the patient is obtained in a constant plane. A stereoscopic camera is used, with constant lighting and constant distances. For the view in forward bending to show rotation, a bar has been devised with a spirit level on top. Two pelots extend downward from this bar, the lower one of which is adjustable and slightly longer than the upper. The upper pelot is placed in the vertebra prominens. The lower pelot is placed on the top of the sacrum and the patient bends forward until the bubble of the spirit level is at its midpoint, when the photograph is taken.

**Thomas, H. B.: Artificial Ankylosis of Spinal Vertebrae.** *Tr. Am. Orth. Ass.*, Phila., 1914, June.

By Surg., Gynec. & Obst.

This article is a report of experimental work undertaken to determine the question of growth in length *per se* of the auto-bone graft placed in the back to cause fixation of the vertebrae. It is presumed that if the graft does not grow when placed, and that since the spinal column does grow, as much as nine inches in length, in some instances, then the tendency would be for the graft to prevent growth in length of the spinal column in that area over which it has caused ankylosis, thus producing a deformity of the back. Kittens were used for the experiments and careful observations during life and after death were made. Tentative conclusions indicate, among other things, that the auto-bone graft does not grow in length *per se*, yet actual observations did not show any deformity.

**Nash, J. B.: Laminectomy for Spinal Injury.** *Australas. M. Gaz.*, 1914, xxxv, 314.

By Surg., Gynec. & Obst.

The author reports two cases of fracture of the spine treated by laminectomy.

The first case was that of a man of 44, who had



fracture of the spine with paraplegia from the lumbar region down, the ninth and tenth dorsal spines projecting markedly. An incision was made over the last five dorsal and first lumbar vertebrae; the muscle and fascia were dissected away and the spinous processes cut away with bone forceps level with the laminae. The spinal canal was completely exposed between the eighth and eleventh dorsal vertebrae and was found to contain only fibrous strands, the cord proper having entirely disappeared. This operation was done eight months after the injury.

The second patient, a man of 35, had complete flaccid paralysis of both legs, loss of reflexes, and a bed sore in the lumbar region following injury to the back. About a week after the injury, incision was made over the tenth dorsal to the third lumbar vertebrae and the spinal canal exposed. The cord was found to have been crushed at the level of the lower edge of the tenth dorsal. After six months the patient was in better condition.

W. A. CLARK.

**Collins, J. and Elsberg, C. A.: Giant Tumors of the Conus and Cauda Equina.** *Am. J. M. Sc.*, 1914, cxlvii, 493. By Surg., Gynec. & Obst.

Tumors of the cauda equina and of the conus cause symptoms which are considered fairly pathognomic, although early, the lesions are often mistaken for some other condition. The authors report three such cases with two recoveries. One was an endothelioma and the other two were endothelial sarcomata.

In two of the cases the operation was carried out in two stages so as to allow the tumor to be extruded from the canal before it was removed.

The important features of the clinical histories of the patients were the following:

1. A history of two or more years' duration.
2. Pain in the small of the back, sooner or later extending down one and then the other extremity.
3. Stiffness of the back in the lumbar region.
4. Increasing stiffness and weakness of the lower extremities, with loss of power of dorsal flexion of the foot.
5. Slight disturbances of the bladder and rectum.
6. The patients were treated for sciatica for long periods.

The important features of the clinical examination were:

1. Rigidity of the lumbar vertebral column.
2. Weakness and stiffness of the lower limbs.
3. Paralysis of the peroneal groups of muscles and sometimes of the tibialis anticus group.
4. Drop-foot on one or both sides.
5. Absence of knee- and ankle-jerks.
6. Tenderness of the lower lumbar spines.
7. Irregular and unsymmetrical sensory disturbances.
8. Lumbar puncture was negative, or yellow fluid which was not cerebrospinal fluid was withdrawn.
9. Wassermann test and X-ray negative.

The typical findings at operation consisted of a large reddish brown, not vascular, tumor within the dura, which filled up the entire lower part of the spinal canal, surrounded the roots of the cauda equina, and extended upward on to the conus, with which it was not closely connected. The growth was not intimately connected with the inner surface of the dura, and could be easily freed.

When the patient was last examined his complaints were: Pain in the back and right thigh; feeling of stiffness; obstinate constipation; no feeling when his bowels moved.

EUGENE CARY.

**Taubenschlag, D.: Operation with Recovery in a Case of Tumor of the Dorsal Cord** (Tumeur de la moelle dorsale opérée et guérie). *Rev. Soc. med. argent.*, Buenos Aires, 1913, xxi, 1091.

By Journal de Chirurgie.

This tumor was the shape of an elongated olive, 27 mm. long and 15 broad. Its lower pole was free, the upper one being fixed to the fourth dorsal vertebra. It developed slowly in a young woman of 22 after a normal delivery, the first symptom being a feeling of heaviness in the lower limbs, which at the end of three months were almost completely paralyzed. All the trouble was localized in the lower limbs, but passive movements could be made readily. There was ankle-clonus on both sides, Babinski's sign only on the right; there was abolition of sensation in a band around the thorax corresponding to the innervation of the sixth dorsal root. With a diagnosis of extramedullary tumor, operation was performed, consisting of laminectomy of the second to the fifth dorsal vertebrae. A hard tumor was found to occupy the left two-thirds of the vertebral canal and the cord was flattened against the right side. It was not adherent to the dura mater but was fixed to the bone by a pedicle which was easily ligated. There was no drainage. Recovery was uneventful and on the tenth day the patient could walk easily. The anæsthesia of the thorax also disappeared. Histological examination of the specimen showed it to be a fibrosarcoma.

SALVA MERCADÉ.

**Alurralde, M.: Compression of the Dorsolumbar Cord by a Fibrosarcoma; Extirpation** (Compression de la moelle dorso-lombaire par un fibrosarcome. Extirpation). *Rev. Soc. med. argent.*, Buenos Aires, 1913, xxi, 735. By Journal de Chirurgie.

A man of 43 for three or four months had had crises of pain starting at the tenth dorsal vertebra, irradiating toward both sides of the abdomen. Then he began to have motor disturbance, first in the left and then in the right leg. By the end of the fifth month the paralysis was complete and the pain had stopped. Retention of urine and feces developed, then incontinence. All the reflexes were exaggerated; there was ankle-clonus and Babinski's sign on both sides; there was fornication, paræsthesia, etc. Meningomyelitis, syphilis, and a spinal lesion were considered, but rejected because of insufficient



evidence. A diagnosis was finally made of pressure on the lumbar or dorsolumbar cord by an intrameningeal tumor.

The patient was operated on by laminectomy of the tenth to the twelfth dorsal vertebræ. The opening had to be extended to include the ninth dorsal and first lumbar vertebræ in order to remove the whole tumor, which was extracted easily without

injuring the cord. Suturing was done, no drainage being used. Death ensued on the fifteenth day.

Histological examination of the tumor showed that it was a fibrosarcoma. The author can not explain the flaccid paralysis after operation that succeeded the spastic paralysis; but he is sure that the cord was not sectioned during the operation.

SALVA MERCADÉ.

## SURGERY OF THE NERVOUS SYSTEM

**Jullien: Suture of the Terminal Branches of the Right Brachial Plexus for Complete Paralysis of the Upper Limb** (Suture des branches terminales du plexus brachial droit par paralysie complète du membre supérieure). *Echo Méd. du nord*, 1913, xxvii, 605.  
By Journal de Chirurgie.

A man of 35 had to be put in a straightjacket and the violent and prolonged constriction of the right arm brought about a patch of gangrene which ulcerated and discharged large fragments of gangrenous tissue; after that there was profuse hæmorrhages to which the patient almost succumbed. The hæmorrhages were finally controlled, the wound healed, and the patient was discharged in a satisfactory condition.

A month later the patient returned. He had regained strength and ate and slept well, but his right arm hung inert, no movement being possible; only the deltoid was spared. The arm was simply a flaccid mass of flesh surrounding the bone; no anatomical details of the muscles could be made out. Insensibility was complete. The skin was the seat of various trophic disturbances.

Details are given of the electrical examination of the various muscles which showed that the flexors of the forearm and hand were most involved, particularly in the region supplied by the ulnar. It was decided to try freeing the compressed nerves or even suturing them if they were destroyed. A large incision, which is used for ligating the axillary artery in the axilla, was made and the mass was found which had been felt through the skin. It was formed of hard cicatricial tissue surrounding

the axillary vessels and all the nerve-cords of the brachial plexus. The elements were carefully dissected and it was found there were 9 fragments of nerves, some of them united by a slender fiber which the author could not be sure was nerve-tissue. The fragments belonged to the musculocutaneous, median, ulnar, internal cutaneous, and radial nerves; the upper end of the internal cutaneous could not be found. The proximal and distal ends were sectioned and brought together with fine silk thread in a fine Reverdin needle. The lower end of the internal cutaneous was included in a little gap in a neighboring nerve that was believed to be the ulnar.

The operation lasted an hour and was considerably interfered with by hæmorrhage from numerous abnormally developed veins; the axillary artery was completely obliterated. Operative recovery was perfect. Late results were as follows: In one month there was no appreciable change. Four months later, normal motility had made great progress; movements of extension and flexion were possible, the muscles could be made out under the skin, which had regained its normal color. Sensation was still dulled. Six months later, motion was complete except in the muscles of the hand; the arm was practically as well developed as the left one, and sensation had returned completely. Fifteen months after the first operation, the hand had become normal and the fingers had regained motion except the thumb. He could move his arm in all directions and it was almost as strong as the other. The case therefore may be called a recovery.

J. DUMONT.

## DISEASES AND SURGERY OF THE SKIN, FASCIA, APPENDAGES

**Oshima, T.: The Fate of Homoplastic Skin-Flaps in Human Beings** (Über das Schicksal des homöoplastisch transplantierten Hautlappens beim Menschen). *Arch. f. klin. Chir.*, 1914, ciii, 440.  
By Zentralbl. f. d. gès. Chir. u. i. Grenzgeb.

The author gives a review of the results of homoplastic transplantation published in the literature, some of which have been positive and some negative, and then reports a case of homoplastic transplantation in a human subject, with the results of microscopic examinations made at stated intervals. The

result shows that at the end of two weeks the appearance of the flap is practically normal and perfectly coalesced with the surrounding skin, but that it gradually dies and at the end of the forty-seventh day has completely disintegrated.

Experiments were then performed on rabbits, two young rabbits being fastened together, only the pedicle of the skin-flap being left as a connection. After seven days the pedicle was cut, immediately after which the flap showed the same picture as the normal skin. On the fourth day there was a change

in the tissue; the meshes of the skin tissue were crowded with red blood-cells and there was marked distention of the capillaries. It ended in dry necrosis of the flap.

From his experiments the author concludes that the homoplastic flap does not take, and gives three possible reasons for this. The first is the opinion held by Ribbert, Ehrlich, Schöne, and others as to

the difficulty of assimilating foreign albumin. The second is the primary toxic effect of the tissue juices of the host on the transplant (Loeb, Schöne). And third, the immunity reaction which may be regarded as a secondary anaphylactic reaction (von Dungern, Ehrlich, and others). Microscopic picture and explanations are added to the work.

VORSCHÜTZ.

## MISCELLANEOUS

### CLINICAL ENTITIES—TUMORS, ULCERS, ABSCESES, ETC.

**Grawitz, P.: Report on Grawitz's Results in the Study of Cell-Formation by the Method of Harrison and Carrel** (Abbau und Entzündung des Hertzklappengewebe. Verlag Richard Schoetz, Berlin, 1914. By Surg., Gynec. & Obst.

Twenty-five years ago Grawitz, of Greifswald, took issue with the existing prevalent dogma and proclaimed that the pus-cells of the human being were derivatives, not of the blood, but of tissue-cells which were liberated in consequence of a liquefaction of the tissue. It was possible for him to show that in consequence of the increased accumulation of fluid occurring in inflammation and wound-healing, elements having the value of cells, lying on the smaller bundles of the fibrous connective tissue in a resting or inactive state, either incapable of being stained with all usual methods of nuclear staining or at least always decolorized afterwards, "awaken" as it were.<sup>1</sup>

For the various tissues, above all for the cornea in particular, Grawitz and his pupils have long since demonstrated the origin of the wandering cells from the fixed cells of the tissue. The majority of pathologists have looked askance at the doctrine and disputed its correctness saying that Grawitz would really thereby abandon the law of Virchow, "*omnis cellula e cellula*" and have cells arising from dead intercellular substance. The discovery of Harrison and Burrows that tissue-cells could be encouraged to proliferate without the body stimulated Grawitz, in conjunction with his pupils, Schlaefke and Uhlig,<sup>2</sup> to again take up the question of the origin of the wandering cells in the cornea and heart valves. By the employment of this method, it seems possible finally to exclude the possibility of contamination with leucocytes or to maintain that they have wandered out from the blood, for both the plasma and slide can be secured scrupulously free from leucocytes.

In the investigation of the cultures of the aortic valves of the cat three different types of tissue disorganization ("*Gewebsabbau*") were observed.

1. The stellate cell tissue in which, in consequence of the cultivation, the mass of the tissue has

<sup>1</sup> P. Grawitz. Wanderzellbildung in der Hornhaut, Deutsche med. Wchnschr., 1913, No. 28.

<sup>2</sup> P. Grawitz, F. Schlaefke und F. Uhlig. Über Zellbildung in Cornea und Hertzklappen. Verlag Hans Adler, Greifswald, 1913.

proliferated, consists of stellate-shaped cells. The nuclei of these have increased amitotically and secured the material for the body of their protoplasm and its processes from the elastic fibers.

2. The "*Körnchenzellen*" type is represented by cells, which in contrast to those of type I, are large, polygonal, or swollen and vacuolated and have also divided amitotically and to some extent mitotically. These cells appear to have secured their protoplasm through the contribution of both white and elastic fibers. In the large cell body of these cells lie numerous fat droplets which have probably arisen from the transformed elastic fibers.

3. In the third type the tissue of the valve is replaced by tissue consisting chiefly or almost exclusively of small mononuclear round cells, with clear surrounding area. Many of these mononuclear elements have a clear protoplasmic body which has taken the eosin markedly. Between these cells lie multinucleated giant cells scattered about much as in syphilitic granulation tissue. All of these round cells have arisen from the ground substance through its transformation into protoplasm.

In contrast to the third type a fourth type of tissue may arise in which the small round-cells with simple or fragmented nucleus derive their protoplasm from the elastic fibers alone.

These experiments of Grawitz, carried out by means of the new culture methods, have opened up new outlooks or rather given new points of view with respect to the normal histology and behavior of tissue as well as their pathological transformations. The "ground-substance" is not a dead intercellular matter but a most active one, capable of transforming itself into the protoplasm of the new cells.

Grawitz has shown that it is possible to secure by cultivation of corneal and valvular fragments pictures identical with those furnished in inflammation and wound-healing but under conditions where the much disputed rôle of leucocytes can be excluded.

F. LANDOIS.

**Balfour, D. C.: The Care of Surgical Patients.** Med. Rec., 1914, lxxxv, 378.

By Surg., Gynec. & Obst.

The author discusses the subject under four headings: (1) Care before operation; (2) care during operation; (3) post-operative treatment; and (4) advice to patients.



1. Detailed physical examination and careful recording of the findings is imperative. The actual preparation in the large number of patients requires of them but little deviation from their usual mode of living up to the afternoon of the day before operation. In emergency cases the preliminary treatment is necessarily abbreviated. In special groups of cases the risk of operation is greatly lessened by appropriate preliminary treatment. Among these special types are mentioned exophthalmic goiter, toxic non-exophthalmic goiter, disease of the prostate, severe anæmias due to hæmorrhage from uterine fibroids, bleeding ulcers of the stomach and duodenum, deeply jaundiced patients, emaciated patients, particularly gastric cases with obstruction of the pylorus, certain cases with acute infections, etc. The use of alkaloids before operation should be limited and probably confined to morphine and atropine.

2. Ether administered through an open mask by a competent anæsthetist is believed to be the most satisfactory anæsthetic for the majority of cases. Ether by the intratracheal method is extremely satisfactory for certain types of cases. A minimum quantity of anæsthetic should be used to produce anæsthesia which will be just and consistent with the surgeon's work. Careful exploration, a not unduly prolonged operation, maintaining bodily heat, as little manipulation as possible, no more retraction of wound than is necessary to expose the parts, accurate hæmostasis, and a careful toilet to complete the operation, are all factors in lessening the possibilities of post-operative complications.

3. In the after-care, as in the pre-operative care, particular attention should be paid to the special types of cases and to the symptoms and complications as they arise.

4. Patients should be instructed as to caring for themselves and as to what may be expected in the way of symptoms after being dismissed from the hospital. Post-operative treatment of surgical patients as regards judicious living should continue for several months according to the type of the operation.

#### SERA, VACCINES, AND FERMENTS

Jobling, J. W. and Petersen, W.: A Study of the Ferments and Ferment-Inhibiting Substances in Tuberculous Caseous Material. *J. Exp. Med.*, 1914, xix, 383. By Surg., Gynec. & Obst.

The results of this study appear to have a direct bearing on the development of caseation in tuberculosis. Caseation in tuberculosis is a form of coagulation necrosis in which the dead tissues rarely undergo autolysis, except as a result of secondary infection. Syphilis is the only infectious disease presenting a similar condition. In other cases of coagulation necrosis the dead tissues are soon removed by means of autolysis and phagocytosis.

It appeared, therefore, to the authors that sub-

stances having the property of preventing autolysis must be present in syphilitic and tuberculous tissues.

After a long and careful series of experiments, the authors feel warranted in drawing the following conclusions:

1. Caseous matter obtained from lymph-glands which have not become secondarily infected contains substances which inhibit enzyme activity. These substances consist chiefly of soaps of the unsaturated fatty acids.

2. The inhibiting substances are present in relatively smaller amounts when the caseous matter has become secondarily infected. This is probably due to the dilution and washing out of the soaps.

3. Ferments are either entirely absent or present in very small amounts, unless the caseous matter has become secondarily infected.

4. Caseous material from the lungs contains smaller amounts of the inhibiting substances. This may be due to the acuteness of the process, which does not permit an accumulation of the soaps, or to the binding of the soaps with the ferments.

5. Ferments are present in caseous pneumonia. In the whole emulsion the ferments are less active in an alkaline than in an acid reaction; but removal of the soaps shows that those active in an alkaline reaction are also present in considerable amounts.

6. The previous treatment with iodine, of caseous matter from both lymph-glands and lungs increases the action of the trypsin.

GEORGE E. BEILBY.

#### BLOOD

Dejouany: Transfusion of Blood; Its Principles, Indications, and Technique (*La transfusion du sang. Ses principes, ses indications, sa technique.* *Arch. de méd. et pharm. mil.*, Par., 1914, lxiv, 241.

By Journal de Chirurgie.

The author gives a very clear and methodical résumé of the present knowledge of transfusion. He discusses particularly its application in war surgery and believes that military surgeons should have at their disposal the necessary instruments for practicing transfusion. A deeper knowledge of the blood reactions now enables surgeons to avoid the accidents of hæmolysis and agglutination.

It has been found by clinical observation that transfusion has a double action, hæmostatic and hæmatopoietic. Under its influence the number of cells increases, blood pressure and hæmoglobin content increase, and coagulability rises. He concludes that the results have been particularly satisfactory in acute post-hæmorrhagic anæmias, especially those following trauma, surgical operation, or delivery. Hæmophilia of the new-born has also been treated very successfully. In rapidly fatal pernicious anæmias and in anæmias due to diseases of the blood and blood-forming organs, complete recoveries have been rare, but there have been many cases of



permanent improvement. There have been no results in cancer or infectious conditions, but success has repaid the few attempts at transfusion in certain toxæmias, such as carbon monoxide intoxication, pellagra, and the pernicious vomiting of pregnancy. It has been tried in typhoid fever but has hardly passed the experimental stage.

The author discusses in detail the technique by the two methods of direct anastomosis by means of suture or special cannulas (Carrel, Crile, Lambert, Guillot and Dehelley) and indirect anastomosis (Tuffier), by means of paraffined silver tubes. He studies its effects and mode of action and believes that, while the indications should not be extended unreasonably, it should hold the important place in surgical practice that is justified by its great clinical value.

PIERRE MOCQUOT.

### BLOOD AND LYMPH VESSELS

**Glaser, W.: Branches of the Nerves within the Vessel Walls** (Über die Nervenverzweigungen innerhalb der Gefässwand). *Deutsche Ztschr. f. Nervenheilk.*, 1914, 1, 305.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Müller and Glaser formerly denied the presence of nerve-centers in the vessel walls, and also of networks of nerve-fibers, especially in the deeper layers. In later investigations, by means of a staining method recommended by Kreibich, they succeeded in demonstrating nerve-fibers in the large, medium, and small vessels.

The capillaries were accompanied by and wound about with very fine nerves; the smaller arteries and veins were also surrounded spirally with a rather large nerve and the larger vessels contained, besides the nerve-bundles demonstrable in the surrounding connective tissue, a network of nerves arranged in two layers in the adventitia and muscularis, with some fibers penetrating into the intima. End-bulbs could also be demonstrated in the vessel walls.

The nerve network and end-bulbs are acted upon by certain drugs which exercise their effect on the size of the vessels through a local-peripheral action. Ganglion-cells can be found only in the superficial layers of the adventitia of the arteries of organs; they are lacking in the deeper layers.

SIEVERS.

### ELECTROLOGY

**Clunet, J.: Histological Changes Produced by X-Rays on Animal Tissues; Destructive Power and Stimulating Power of the X-Rays.** *J. Röntgen Soc.*, 1914, x, 29.

By Surg., Gynec. & Obst.

Clunet has confirmed, as did Regaud and Blanc, the pioneer French histological work upon the destructive action of the X-rays, carried out by Bergonie and Tribondeau on the testes of rats. A testicle exposed to the X-rays, filtered so as not to harm the skin, shows no cell-changes until twelve to fourteen days have passed, when the immature

cells of the spermatogenic line are no longer found, for the X-rays have caused these cells to mature abnormally fast, and only, or almost only, mature spermatozoa are to be found. A month later not one cell of the spermatogenic line remains.

The rays do not cause indiscriminate destruction of tissue, but show a selective action, especially for cells that divide most quickly, as the cells of a spermatogenic line, and this is the basis of the use of X-rays in radiotherapy. The X-rays modify cell evolution, causing the mature cells to evolve more quickly than normal, and the immature cells to evolve before dividing, so that this particular kind is soon exhausted. The process is exactly the same in the skin. In an experimental acute X-ray burn of a rabbit's skin on the seventh day no change was seen in the connective-tissue cells, but evolution of all of the malpighian cells into horn cells except for one thin basal layer. Smaller doses over a long time cause atrophy of the epidermis and sclerosis of the dermis. In chronic radiodermatitis the skin is much thinner than normal, the dermis is extremely sclerotic, without any papillæ, and the epidermis is reduced to three or four cell layers.

In a severe radiodermatitis of zonal character the hair was preserved at the periphery, near the center the skin was thin and glossy and without hair, then followed a zone of ulceration, while at the center the tissue was entirely necrotic. Histologically the zone of ulceration showed destruction of the middle part of the corpus mucosum of Malpighi; at the center the destruction was complete and the dermis was much thickened, the vessels showed very thick walls and narrow lumina, i. e., endo- and perivascularitis.

He described two cases in detail to show the destructive action on carcinomata. In an atypical epithelioma of the skin which histologically resembled rodent ulcer, ten days after the first dose the cells became very much enlarged and there were more karyokinetic changes. Three weeks after beginning treatment the cells were difficult to distinguish from one another, had undergone keratinization, and later these horny parts were invaded and destroyed by connective tissue, blood-vessels, and leucocytes. When the patient seemed almost entirely healed, histological examination showed the mass to be almost entirely replaced by connective tissue in which were some giant cells, the last remains of the epithelial cells, and some dark cubic cells, epithelial cells that were not killed but were in a sort of lethargic condition, which may explain subsequent recurrences in patients apparently cured.

A rodent ulcer given one very large dose at the center, without a filter, showed histologically at the end of 11 days, no keratinization at the periphery, but keratinization progressively increasing from the periphery toward the center, where there remained no trace of epithelial cells — only connective tissue. These same changes were seen in proceeding from the depth to the surface.



The stimulating or hypertrophic action of the X-rays can be seen on subjects submitted to very minute doses over long periods of time, as a chronic hypertrophic radiodermatitis, later often developing into malignant tumors, in which can be seen, proceeding from the normal skin toward the center in order, first, simple hyperplasia, then papilloma with enormous horn layer, finally monstrous epithelioma cells. Atrophic radiodermatitis and hypertrophic radiodermatitis are nearly always associated together.

Clunet has experimentally produced hypertrophy on rats, and, by repeated burns, a malignant tumor which invaded the abdomen and histologically had the structure of a spindle-cell sarcoma. There were no metastases. The development of experimental X-ray cancer is generally admitted in France. In the rat, sarcoma develops, not epithelioma; however, the most common skin tumor in man is epithelioma, while in the rat it is sarcoma. Then, too, in men epithelioma usually results from continued small doses while in the experimental work on the rat the exposures are more concentrated. Clunet has begun experiments on dogs and cats with small doses to be continued over a long period of time to see if he can produce epithelioma.

In the discussion, the author said he failed in attempts to transplant his first case of experimental X-ray cancer of the rat, but in a second case he succeeded in 40 per cent of transplants, in getting the tumor to take in very young animals and transplanting it to larger animals, and from them to still larger ones.

DAVID C. STRAUS.

**Stern, S.: The Present Status of the Non-Operative Treatment of Benign and Malignant Growths, as Seen at the Clinics Abroad.** *Med. Rec.*, 1914, lxxxv, 615. By Surg., Gynec. & Obst.

From observation of the röntgen technique as practiced at the Freiburg Clinic and its modifications as seen in other places, and the radium or mesothorium technique of various operators, the author concludes:

1. The extreme enthusiasm displayed by the men at the Congress at Halle was entirely too premature, and while remarkable results are accomplished by radio-active substances in the treatment of cancer the matter is purely in the experimental stage.

2. Even in the short time since the Congress the optimism has cooled and men who made positive statements are becoming more guarded.

3. Only years of work will solve the complicated question of dosage, filters, and other technique.

4. The treatment with radio-active substances has shown sufficient results to justify the surgeon in discontinuing operations in cases of surface carcinoma and of mucous membranes easily reached, in patients who can be kept under long observation. In all other cases, operation, followed by raying carried out systematically, is still the best method.

5. There is practically no difference noticeable in the action of mesothorium and that of radium.

DAVID R. BOWEN.

**Beebe, S. P. and Van Alstyne, E. V.: Treatment of Transplantable Rat Sarcoma by Fulguration.** *Surg., Gynec. & Obst.*, 1914, xviii, 438.

By Surg., Gynec. & Obst.

The purpose of these experiments was to determine by the De Keating-Hart apparatus, the effects of fulguration upon normal tissues and upon transplantable sarcoma in rats. Fulguration over the heart and large nerve-trunks caused no injurious effects; where applied directly to one vagus no serious results followed, but when both vagi were exposed to the spark there was a severe reaction followed by death of the animal. The local reaction was an intense oedema and infiltration of the tissues. Only very small tumors could be cured by the spark. In some cases the small tumors showed inhibition of growth without cure. If an area of normal skin was fulgurated and a tumor graft placed in this area immediately afterwards, it failed to grow, but if the local reaction consequent upon the fulguration was allowed to subside, a process which required from eight to ten days, before the graft was implanted there was no failure to grow, indicating that the inhibition in the former case was due to the intensity of the reaction rather than to any permanent nutritional change in the fulgurated area.

Fulguration of a tumor graft before planting caused a serious injury to the tissue, only 50 per cent of such grafts showing growth as compared with 100 per cent in the controls. If an incomplete operation was made upon a growing tumor and the remaining portion of the growth fulgurated, cure could be effected, provided the section remaining was not more than one millimeter in thickness. The therapeutic effect is probably due to the local reaction consequent upon the application of the spark and not to an obscure nutritional change in the tissue about the tumor.

# GYNECOLOGY

## UTERUS

**Weibel, W.: Late Recurrences after the Radical Abdominal Operation for Carcinoma of the Uterus** (Über Spätrezidive nach der erweiterten abdominalen Operation bei Carcinoma Uteri). *Arch. f. Gynäk.*, 1914, cii, 141.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Very few cases of late recurrence of carcinoma of the uterus are known, as most of the cases are not followed longer than five years. It is interesting therefore to follow the cases, especially those operated on abdominally, for a longer time, to determine whether there is justification for setting a five-year limit for observation. Weibel did this in 169 cases of carcinoma of the cervix: 13 had recurrence of carcinoma after 6 to 8 years, and in one case a sarcoma of the foot appeared after five and one half years.

The reappearance of a carcinoma occurred 6 times in the sixth year, 5 times in the seventh year and twice in the seventh to the eighth year. Fifty per cent of all recurrences take place in the first year, 25 per cent in the second year, 11.5 in the third year, and in the following years up to the seventh about 3.4 per cent; also from the fourth year the percentage constantly decreases, and after the end of the seventh year recurrences are never seen. To be absolutely certain, therefore, observation would have to be extended to the seventh year, but this is very difficult and for all practical purposes observation for three years is sufficient. The author argues, therefore, for a reduction of the five-year period to three, at least for the radical abdominal operation.

KLEIN.

**Richter, J.: The Regeneration of the Mucous Membrane of the Uterus after Curettage** (Zur Regeneration der Uterusschleimhaut nach Ausschabung). *Gynäk. Rundschau*, 1914, viii, 47.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author discusses the regeneration of the mucous membrane of the uterus after curettage. He divides his work into two parts: In the first he discusses the results of his microscopic examination of 18 human uteri, in the second his experiments with curettage and regeneration of the mucous membrane in dogs. He found great similarity in the results in the two parts.

The effect of the curette on the mucous membrane varies according to whether the curettage is superficial or deep. In superficial curettage the greater or lesser remnants of the mucous membrane form the basis for a reconstruction of the lost tissue. The new formation of the glands takes place chiefly through the growing out of the tubes of the glands

that have remained deep down, from the cells of which the surface epithelium is restored; by the fifth day the latter has completely covered the curetted surface.

On deep curettage in the fourth week there is a thin layer of young connective tissue rich in blood-vessels, in which no glands can be demonstrated. This tissue is overgrown with cells which originate from the epithelium of the neighboring parts. There are a few depressions in the covering epithelium which the author thinks may be regarded as the beginning of gland formation.

EBELER.

**Theilhaber, A.: The Causes and Treatment of Idiopathic Hæmorrhage and Discharge from the Uterus** (Die Ursachen und die Behandlung der essentiellen Uterusblutungen und des Ausflusses). *Arch. f. Gynäk.*, 1914, cii, 165.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author demonstrated in 1904 that the thickness of the mucous membrane of the uterus varies before, during, and after menstruation. He found individual variations in the form and number of the glands (1901), and claims priority over Hitschmann and Adler. The increase in the number of glands does not depend on the premenstrual period, "premenstrual glands" often being found at other periods. Albrecht, Schickele, Keller, and Henkel are cited in support of this statement. Hypertrophic glands were found in 52 per cent of all cases, hyperplastic ones in 62 per cent.

Uteri removed by operation are regarded as pathological. He regards as normal only the uteri removed from corpses, those of new-born infants and old women, and mucous membrane removed from normal individuals. No two places in the mucous membrane are alike, the only constant thing about the premenstrual mucous membrane being the variation in form, the hyperæmia, and the oedema. He gives figures as to hyperplasia and hypertrophy of glands in all the periods of the cycle. He gives no definition of his own conception of the question. In menorrhagia there is always hyperæmia of the uterus. There is hæmorrhage in tubal diseases even when the ovary is intact. In myomata the uterus is extremely hyperæmic. In many women there is increased hæmorrhage from the uterus in the pre-climacteric. The uterus is erectile like the penis or the clitoris, but the blood content decreases more slowly. He compares the menstrual bleeding to a sponge; the fuller it is the greater the bleeding. The strength of the muscle contractions influences the stoppage of the bleeding. Degeneration of the connective tissue and hyperæmia are the two factors that induce the hæmorrhage. A clear discharge



is caused by hypersecretion, a yellow one by gonorrhœa. The glands of the body of the uterus secrete daily.

A short discussion of treatment is given. Curettage is effective many times, also corrosives. Styp-tics also have a good effect, as well as systematic scarification of the os — 30 per cent formalin is preferred. Röntgen treatment renders the thickened and hyperæmic uterus small and anæmic and causes cessation of the bleeding.

SCHRÖDER.

**Focke: Digitalis in Hæmorrhage of the Uterus** (Digitalis bei Uterusblutungen). *Therap. d. Gegenw.*, 1914, IV, 68.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Focke has again taken up the digitalis treatment for uterine hæmorrhage. It has the least effect in hæmorrhage due to organic causes; in these cases it only supplements local treatment. It has a better effect in pregnancy and threatened abortion, and often aids in carrying the child to term. The best results are obtained in cases where there are no anatomical changes in the uterus. The more anæmic the patient is, the prompter the effect of the digitalis; in full-blooded patients it is necessary to give more frequent doses, as the effect begins more slowly and does not last so long.

Focke explains the effect as follows: Physiological menstruation is the effect of venous stasis; if this stasis is increased in intensity it is the expression of a local or general disturbance of the circulation, which causes severer bleeding. There is seldom real heart disease. Details of the method of treatment are given. Digitalis treatment also seems to give good results in climacteric bleeding.

BRETZ.

**Bell, W. B.: The Causes of the Non-Coagulability of Normal Menstrual Blood and of Pathological Clotting.** *J. Pathol. & Bacteriol.*, 1914, xcii, 462.

By Surg., Gynec. & Obst.

The author has carried out a series of experiments in order to determine why menstrual blood does not clot.

His first experiment proved that an equal quantity of menstrual blood will not prevent ordinary blood from clotting. The second experiment as to whether an extract of the endometrium prevents the coagulation of normal blood was negative, as clotting occurred; likewise an extract of the whole uterus caused clotting. The fourth experiment was to prove whether the endometrium had a selective action on fibrin ferment. This experiment was also negative. The last experiment was to show that menstrual fluid contains nothing that will destroy the fibrin ferment of normal blood. A perfect clot occurred also, in this experiment.

The author has printed 2 tables, one where the menstrual blood did not clot and one in which it did clot. From these he was unable to draw any definite conclusions. All the experiments performed did not clear up the etiology of "why menstrual blood does not clot."

EUGENE CARY.

**Schickele, G.: The Relation of Menstruation to General and Organic Diseases** (Die Beziehungen der Menstruation zu allgemeinen und organischen Erkrankungen). *Ergebn. d. inn. Med. u. Kinderheilk.*, 1913, xii, 385.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author discusses only the nature of menstruation; its relation to general and organic diseases will be published later. His work is based on a critical study of the literature of recent years and extensive experiments of his own. He agrees only partially with Hirschmann and Adler's views as to the regular changes in the uterine mucous membrane. In all cases there is a premenstrual dilatation of the capillaries and vessels, and almost always an œdematous saturation of the mucous membrane, while the other changes, especially in the glands, are not so uniform.

There is a detailed report of the histological findings in the rut of animals; the analogy between it and human menstruation must be taken with a grain of salt. The question of the time relation between ovulation and menstruation is still unsettled. Certain changes described in the mucous membrane and corpus luteum vary within wide limits and there are numerous exceptions. He discusses the different theories as to the lack of coagulability of menstrual blood. There is no change in the coagulation time of the blood in the body during menstruation, and no uniform effect on the hæmoglobin content and the number of erythrocytes. There is frequently a slight increase in leucocytes and a slight lymphocytosis, but this is not uniform. He rejects Mary Jacobi's theory of a regular monthly wavelike movement of all the woman's life functions.

A study of the statistical material and careful experiments of his own have shown Schickele that there is no premenstrual rise or intermenstrual fall in the pulse, temperature, blood-pressure, muscle strength, and metabolism. He describes the experiments as to the effect of extracts and expressed juices of ovary, corpus luteum, and uterus, all of which have a marked vasodilator effect, which is especially noticeable in hyperæmia of the genitalia. This is not specific, however, for it is produced, though to a less degree, by extracts of other glands. After discussing the clinical course of menstruation and the different theories in regard to it, he expresses his own views as follows:

The value of rutting and menstruation lies in the preparation of the mucous membrane of the uterus for pregnancy. Its appearance is dependent on the presence of the ovaries. The growing follicle secretes substances that, by vasomotor stimulation and influence on the coagulability of the blood circulating in the uterine mucous membrane, call forth changes in the uterus, the different organs, and the whole organism. As soon as a sufficient quantity of these substances has been produced to bring about the maximum of change in the vessels, menstruation begins.

RUHEMANN.



**Von Graff, E.: Treatment of Meno- and Metrorrhagia, not Caused by the Climacteric, with Röntgen Rays** (Die Behandlung der nichtklimakterischen Meno- und Metrorrhagien mit röntgenstrahlen). *Strahlentherap.*, 1914, iv, 426.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

This is a report of 36 completed cases of uterine hæmorrhage not caused by the climacteric, in women from 12 years of age up. There was recovery in 81 per cent, there being fewer recurrences after intensive treatment than after small doses. The author believes there need be no fear of the impregnation of injured ova and the development of malformed or inferior children, because such a thing has never been known to occur in man. All hæmorrhages of ovarian origin furnish an indication for röntgen treatment.

WÖSSNER.

**Guthrie, J. R. and Whiteis, W. R.: Simple Method of Fixing the Uterus in Prolapsus**. *Iowa M. J.*, 1914, xx, 473.

By Surg., Gynec. & Obst.

The authors claim the following advantages for their method of operation in fixing the uterus in prolapsus and prolapse:

(1) Simplicity of technique; (2) uniformly good results; and (3) it is a bloodless operation.

The disadvantage is that it is necessary to sterilize the patient before the menopause, although the menstrual function need not be interfered with. The technique is as follows:

A three or four inch incision is made in the median line or over the right rectus muscle down to the symphysis pubis. The incision is carried down and through the peritoneum. The uterus is grasped, brought up into the wound and into antelexion. If the patient is past the menopause and there is no disease of the adnexa, the peritoneum is immediately closed, beginning at the upper end. It is sewed to the posterior surface of the uterus where the lower end of the suture line joins it. One or two stitches on either side unite the peritoneum and uterus, similar to the Krocher fixation. The round and broad ligaments and tubes are partly extraperitoneal, but mostly intraperitoneal. If the incision has been made in the median line, the sheaths of the recti muscles are opened and the muscles sutured together behind the uterus, thus making a bed on which it rests. While traction is made on the uterus to draw it up out of the pelvis, it is pressed back on the recti muscles and the anterior fascia closed. These sutures also enter the uterine substance. The skin is closed in the usual manner; and what looked like a protuberance in the abdominal wall, after suture of the muscles, completely disappears.

The entire operation rarely takes more than fifteen minutes. It not only corrects prolapse of the uterus, but, in most cases, cystocele and rectocele are cured as well. Any degree of prolapsus may be treated in this manner. In some cases, only the fundus of the uterus can be transplanted, while in complete prolapsus, almost the whole body may be brought outside of the recti muscles. EDWARD L. CORNELL.

**Nyulasy, A. J.: Looping the Cardinal Ligaments in Uterine Prolapse.** *Ann. Surg.*, Phila., 1914, lix, 621.

By Surg., Gynec. & Obst.

The author states, "The multiplicity of operative procedures for prolapsus uteri indicates to some extent the uncertainty of opinion as to the essential cause of the condition." Some injury has taken place, and the uterine supports injured, hence repairing of the injury and replacing of the uterus is necessary.

The uterine supports are (1) the pelvic diaphragm and (2) the ligaments. He believes the cardinal ligaments, in the broad ligaments, are the real supports:

"The cardinal ligaments commonly arise by three more or less definite heads from each side of the uterus, the middle head corresponding to the position of the uterine artery, the interior head being attached to the upper surface of the lateral vaginal fornix, and the superior head being attached a little above the median head. The three heads of the cardinal ligaments unite together to form a band about half an inch or more in width, which passes outward for over an inch between layers of the broad ligament. The cardinal ligament, which up to this is largely muscular, now tends to change its character, sending off fibrous bands, fanwise to the wall of the pelvis and other parts—some of these bands, it is to be noted, being inverted into the posterolateral wall of the bladder and others passing up over the iliacs. After locating the ureter, the cardinal ligament may be dissected from the posterior peritoneal layer of the broad ligament and thus completely isolated. Hooking the ligament up on the finger it is found to be elastic and of considerable strength, and obviously quite capable of adequately supporting the uterus in the pelvis."

The technique consists of suprapubic abdominal coeliotomy. The bladder is freed from the uterus, the cardinal ligaments exposed and dissected off of the posterior layer of broad ligament and looped up on the anterior wall of the uterus, and sutured with silk to the uterus. A loop is made in each round ligament to correct retroversion and the wound in the peritoneum is closed by catgut sutures.

Five cases are reported—all successful. In one the plastic work was done first; in four the plastic work was done two weeks later.

The operation should not be lightly undertaken. Its striking advantages are:

1. Practical absence of hæmorrhage.
2. Excellent, immediate anatomical result and almost certain good permanent effect.
3. Comparative absence of post-operative shock.
4. Absence of raw surfaces. C. J. STAMM.

**Crossen, H. S.: Conservative Operative Treatment of Long-Standing Inversion of the Uterus.** *J. Am. M. Ass.*, 1914, lxii, 1061.

By Surg., Gynec. & Obst.

The author opens the article by briefly outlining the history of the operations recommended for



inversion of the uterus. He reports a case occurring in a young women 23 years of age, in whom the condition had been present for nearly a year. The Spinelli method was followed, tube drainage being employed posteriorly and rubber tissue anteriorly. Following operation, the patient had considerable fever, which gradually subsided in the course of ten days. There was no peritoneal involvement. Menstruation returned the second month after operation and has been regular since. The patient's general health is good and a recent examination showed the uterus and other pelvic organs normal.

EDWARD L. CORNELL.

**Van Teutem, L. A.: Treatment of Retroflexed Uterus** (Behandlung der Retroflexio uteri). *Nederl. Tijdschr. v. verlosk. en gynec.*, 1914, iii, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A report is given of 1364 patients treated at the Leyden clinic for retroflexion from July, 1903, to July, 1912. Of these, 344 were operated on: 307 by the Alexander-Adams operation, 8 by the Doléris, 14 by ventrofixation, 15 by laparotomy, and in 13 total extirpation was performed on account of complications. Of the 1,020 not operated on, 407 were treated orthopedically with pessaries; in 27 the uterus was replaced; 586 were not treated.

The average time of the Alexander-Adams operation in 34 cases was 15 minutes. In 3.2 per cent of the cases 14 days after the operation the uterus was again retroflexed. Later, objective examination was not made, but subjectively 153 of the patients, 70 per cent, declared themselves cured, about 15 per cent not cured.

Of 217 patients, 4 had acquired hernia, 99 became pregnant after the operation, 46 had no symptoms during pregnancy, 3 only slight ones, 59 were delivered spontaneously, and 24 aborted.

Of the cases in which the Doléris operation was performed, one was not cured, one was improved, 2 had recurrence, and there was no report from the other 4 cases. After ventrofixation only 20 per cent were cured.

Van Teutem concludes that ventrofixation, vaginal fixation, and the Doléris operation should be performed as seldom as possible, and that the best results are obtained by the Alexander-Adams operation and pessary treatment. In married women the Alexander-Adams operation is indicated, if the pessary treatment is unsuccessful or if the patients themselves wish it. There was no mortality after the Alexander-Adams operations. STRATZ.

**Elliott, H. R.: A Case of Infantile Uterus and Appendages, with Result of Treatment.** *J. Am. M. Ass.*, 1914, lxii, 1085.

By Surg., Gynec. & Obst.

Elliott reports a case of infantile uterus and appendages with irregular and scanty menstrual flow, treated by abdominal massage and the extract of luteum, that became pregnant after seven months' treatment. Pregnancy proceeded in a perfectly

normal manner and the patient was delivered of a normal full-term baby weighing 6 pounds and 2 ounces. Both the mother and baby made an uneventful and perfect recovery.

HARVEY B. MATTHEWS.

**Braude, I.: Perforation of the Uterus, Tearing Off of the Appendix, and Multiple Perforations of the Intestine Cured by Operation** (Uterusperforation mit Abreissen des Wurmfortsatzes und multiplem perforierenden Darmverletzungen operativ geheilt). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1875.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Braude describes a case in which dressing forceps were used in delivering a miscarriage at four months, and in which the uterus was perforated, the appendix torn off, three perforations made in the ileum and the left ovary crushed. The patient recovered after suture of the intestine, appendectomy, extirpation of the uterus with drainage, and removal of the left ovary. Prognosis is much graver in perforations with dressing forceps than with the curette, finger, or other means because there is frequently loss of substance in the intestine followed by infection. A large opening in the uterus, especially if made with dressing forceps, indicates immediate operation, and in infected cases extirpation of the uterus by laparotomy with free drainage through the vagina.

SULZER.

**Falk, J. I.: Innervation of the Uterus and Vagina** (Ein Beitrag zur Lehre über die Innervation des Uterus und der Vagina). *Dissertation*, Moscow, 1914.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author's report is based on a series of experiments performed on rabbits and dogs. The puerperal and gravid uterus reacted most strongly, the virgin uterus least. Stimulation of the peripheral end of the hypogastric, pelvic, and internal spermatic caused contractions of the uterus and vagina. Stimulation of the vagus and phrenic also caused contraction, which the author believes is due to the fact that these nerves carry sympathetic fibers. The stimulation of the central end of the hypogastric, pelvic, vagus, and phrenic also causes contraction. Probably the two first contain sensory fibers for the uterus and vagina. No contractions are caused when the aorta or inferior vena cava are ligated, but there are contractions if the nerve network of the aorta is mechanically stimulated. There is a contraction on severe loss of blood or cessation of respiration. As stimulation of any part of the cerebral cortex, the pons, cerebellum, etc., causes contractions, and as stimulation of the lumbar cord does not cause any stronger contraction than any other part, the author does not believe that there is a center in the lumbar cord for movements of the uterus, but assumes that there are several centers, probably one in the medulla, as contractions are caused by very slight stimulation of it. The uterus can also contract without any influence from the nervous system, as was shown by ex-



periments after section of all its nerves. The author believes the central nervous system has only a regulating effect. Pharmacological experiments showed that strychnine, ergotine, secacornin, hydrastis canadensis, adrenalin, and suprarenin cause strong tetanic contractions of the uterus and can therefore be used as hæmostatics in gynecology. Mammin, pituitrin, and extract of ovary cause contractions of a peristaltic character and may be used to produce pains. Contractions of the same kind are caused by alcohol, gall, extract of placenta and embryo, but they cannot be used therapeutically.

VON HOLST.

**Heineberg, A.: Uterine Endoscopy; an Aid to Precision in the Diagnosis of Intra-Uterine Disease.** *Surg., Gynec. & Obst.*, 1914, xviii, 513.

By Surg., Gynec. & Obst.

As an aid toward greater precision in the diagnosis of intra-uterine disease, especially the differentiation of carcinoma of the fundus uteri from non-malignant conditions, Heineberg has devised an uteroscope, by means of which a clear view of the entire uterine cavity may be obtained.

The instrument consists of two parts: (1) A straight tube with an irrigating attachment and (2) an electric lighting attachment, like the one used in Young's urethroscope, by means of which light is projected through the tube to illuminate the uterine cavity. Full dilation of the cervical canal must be obtained before the uteroscope is introduced.

It has served to demonstrate the shaggy endometrium in a case of polypoid endometritis; a piece of foetal envelope in a case of incomplete abortion as well as minor changes in the endometrium, in other cases. His conclusions are as follows:

1. There is a well-recognized need for methods of greater precision in the diagnosis of intra-uterine disease.
2. Greater accuracy in the diagnosis will diminish the resort to unnecessary and destructive operations.
3. Uteroscopy affords information concerning changes in the endometrium *in vivo*, not obtainable by any other method of investigation.
4. Uteroscopy, like other diagnostic procedures, has its limitations and definite contra-indications. Its use should be restricted to those cases in which it can elicit valuable information without endangering the health or life of the patient.

**Guggisberg, H.: Effect of Internal Secretion on the Activity of the Uterus** (Über die Wirkung der inneren Sekrete auf die Tätigkeit des Uterus). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxv, 231.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Besides the nervous part of the hypophysis other glands with internal secretion have a stimulating effect on the motor function of the uterus, especially the thyroid and placenta. The author's experiments confirm the assumption that the placenta possesses

the function of internal secretion as well as having an effect on metabolism. The action of the corpus luteum does not seem to be so uniform. Frequently it has an inhibitory effect. In other cases there was a slight stimulation of the uterus. The author at present is unable to give an explanation of the lack of uniformity in the effect. Probably more extensive research will explain it. In the serum before and during labor there is no increase in demonstrable substances that induce labor pains; but in the pregnant uterus substances can be demonstrated that have a stimulating effect on the musculature of the uterus.

RUNGE.

**Löhnberg, E.: Experience with Vaginal Amputation of the Body of the Uterus** (Unsere Erfahrungen mit der vaginalen Korpusamputation). *Prakt. Ergebn. d. Geburtsh. u. Gynäk.*, 1914, vi, 130.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Löhnberg performed vaginal amputation of the body of the uterus on 54 cases up to January, 1913, and was able to examine 51 of them later. Twenty-five of them were operated on for hæmorrhagic diseases of the uterus; 8 for myoma; 6 for prolapse; 10 for abortion and sterilization; 8 because of pulmonary tuberculosis, in the second to the fifth month with sacral anæsthesia; and 1 each for heart disease and bilateral pyelonephritis. The technique in use is described in detail. Twice there were injuries of the bladder, once exudate in Douglas' pouch, 4 times exudate from the stump, twice thrombophlebitis of the lower extremity. There were no deaths, and most of the patients were discharged on the twelfth day. Vasomotor symptoms of the menopause were observed in 20 per cent of the cases, especially in the older women; but they were milder in degree than after castration. There were no psychic disturbances, and the findings on gynecological examination were very favorable.

Löhnberg thinks the danger of malignant degeneration of the stump is not great, and describes 13 cases. He believes with Rieck and others that the above method is to be preferred to vaginal total extirpation which frequently produces deformity of the vagina; the advantages are the shortness of the operation, less loss of blood, and a more uninterrupted recovery. It is also to be preferred to röntgen treatment, especially in chronic metritis, if it is necessary for the patient to resume work in a short time.

SULZER.

**Jung, P.: Rieck's Vaginal Amputation of the Body of the Uterus** (Erfahrungen über die vaginale Korpusamputation nach Rieck). *Gynec. helvet.*, 1913, xiii, 295.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author has performed Rieck's vaginal amputation of the body of the uterus 26 times for metro- and menorrhagias that resisted all other methods of treatment. In 7 cases there was prolapse of the uterus and vagina, in 4 cases pregnancy of a few weeks' duration with pulmonary tubercu-



losis. The technique was that given in Krönig-Döderlein's operative gynecology. There was uneventful recovery in all cases.

In the cases of prolapse he also performed extensive anterior and posterior plastic operations, and in a case of cystocele vesicovaginal interposition of the stump. The ages of the patients were from 23 to 45 years; they had had from 4 to 9 deliveries, one being a unipara. All the patients were very much satisfied with the results. Menstruation stopped completely in some cases; in others it was slight.

The chief advantage of the procedure is that it is almost completely extraperitoneal and therefore shock is avoided. Though the results of röntgen treatment are satisfactory in such cases the duration of the treatment is so great that operation often becomes necessary on economic grounds or even from the point of view of health if bleeding is persistent. The same is true to a greater degree of mesothorium treatment.

MORALLER.

**Mayer, A.: Dissection of the Ureter and Uterine Artery in the Radical Operation for Carcinoma of the Uterus** (Über die Präparation von Ureter und Uterina bei der erweiterten Uteruscarcinomoperation). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxv, 399. By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

In Freund-Wertheim's operation the dissection of the ureter is often quite difficult, if, for instance it is hard to separate the folds of the broad ligament because of senile atrophy of inflammatory tissue, or if hæmorrhage from numerous branches of the veins shut off the view of the field. A slight modification of the ordinary operation is recommended:

The ureter is almost always visible at the upper part of the posterior wall of the pelvis, and if, after ligating the adnexa and the round ligament, the uterus is drawn forward and toward the opposite side, it becomes visible as far as its entrance into the parametrium. If a long slit is then made over the point of its entrance into the parametrium, it at once springs out, and then, after dissecting the bladder and separating the posterior fold of the ligament to the anterior angle of the incision just made, the uterine artery can very easily be isolated, or, if this cannot be done, Wertheim recommends that the entire region of the uterine artery in front of the ureter be seized *in toto* with an instrument or the fingers, and cut off. An advantage of this method, besides the ease of orientation and avoidance of hæmorrhage, is the fact that more of the tissue of the parametrium is removed than by any other method.

BONZEL.

**Keifer, H.: Is There a Myometric Gland in the Human Uterus** (Existe-t-il une glande myométriale dans l'uterus humain)? *Ann. et Bull. Soc. roy. d. sc. méd. et nat. de Brux.*, 1914, lxxii, 26.

By *Journal de Chirurgie*

In 1911, Keifer discovered a myometric gland with internal secretion in the pregnant rabbit and since then has been looking for one in other female

mammals. He has found it in the cobra and in the rat, where it develops from the middle of pregnancy until just before parturition. He has had difficulty in getting suitable material for study in woman, but in 1912-13 he had occasion to perform 7 cæsarean sections, and in each case he excised a thin layer of uterine tissue along the incision. In the two premature cases it happened that the incision was at the site of the placenta. The material corresponds, therefore, to that examined in the other animals. The following is a description of the microscopic findings in the specimens removed at term, at eight months, and at eight and one-half months:

1. In the wall of the uterus at the eighth month of pregnancy there was no transformation of the interfascicular connective tissue into epithelioid cells. But the remarkable fact was the extreme hypertrophy followed by a process of cytolysis and karyolysis in the muscle fibers of the walls of the arteries and important sinuses. The details are similar to those observed in the cobra, namely: considerable hypertrophy of the cytoplasm and karyoplasm which had become very granular and more chromophilic; disappearance of the boundaries of the cells, then malformation of the bodies of the cells and nodules by œdema and vacuolization; finally, absorption of these elements when they were located in dense connective tissue, or a discharge of the products of cytolysis into the lumen of the vessels of the lymphatic spaces or the neighboring vasa vasorum. Direct division of the nuclei was sometimes observed, as well as the formation of very fine grains of reddish brown pigment in the cytoplasm. The connective tissue at certain points of the arterial wall had proliferated abundantly, especially in the neighborhood of the muscular zones that were undergoing destruction. At these same points, it was infiltrated with numerous lymphocytes. The intervention of the connective tissue in the regeneration of muscle fibers is evident, also that of the lymphocytes in the mechanism of elimination of the remains of the cells. At eight and a half months the fragment of the uterus which the author examined showed clearly that the phenomena of hypertrophy and cytolysis were finished. There were only rare vestiges of this destruction at the time, and they had disappeared completely at term, as was found in all the specimens where the cæsarean section had been performed at term.

2. Independently of the phenomena just described in the blood-vessels of the uterus, there was a similar process of destruction in the muscle bundles throughout the whole thickness of the uterus in the placental zone, principally along the vessels, and especially in the immediate neighborhood of the placenta. This shows that in the human uterus, as in that of the other animals mentioned, notable changes in structure are taking place in the latter part of gestation, particularly about the eighth month in the region near the placenta. These changes in the human uterus end in a considerable destruction of smooth muscle parenchyma in the



vessels, as well as in the uterine tissue itself. The process is similar to that taking place in the female cobra; the only thing he could not find in the human subject was the participation of the connective tissue elements in the formation of an epithelioid and glandular tissue, such as has been described by Ancel and Bouin in the rabbit. The author thinks it too soon to attempt to interpret the function of these changes.

J. DUMONT.

#### ADNEXAL AND PERIUTERINE CONDITIONS

**Timofejew: Development of the Corpus Luteum in the Human Ovary** (Zur Frage über die Entwicklung des Corpus Luteum im menschlichen Eierstock). *Dissertation*, Kasan, 1913.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Timofejew examined 67 fresh human ovaries obtained by operation. In 53 cases there were menstrual corpora lutea; in 14, corpora lutea of pregnancy. The wall of the mature graafian follicle consists of an epithelial layer, the membrana granulosa, and a connective-tissue layer, the theca folliculi, which in its turn is divided into an external theca and an internal one, which has many fat-containing cells. There seems to be no special membrana propria between the epithelial layer and the theca folliculi. At the time of the ripening of the follicle there seems to be no destruction of cells in the epithelium of the granulosa.

He explains the debated question of the blood coagulum in the ruptured follicle by the fact that small amounts of blood can enter the cavity of the follicle from the vessels at the point of rupture and also from the torn capillaries of the theca interna. In the latter case the blood may either break through the epithelium or lift the epithelium up from the wall of the follicle. In these cases a blood coagulum is never formed that fills the whole cavity of the follicle. There are frequently secondary hæmorrhages into the corpora lutea which originate from the newly formed vessels of the lutein layer, but they only form a thrombus on the wall which does not fill the cavity.

The author believes that the lutein cells of the corpora lutea originate from the epithelial cells of the membrana granulosa. The latter hypertrophy, lipid bodies collect in the protoplasm, which, the author found by Ciaccio's method, belong to the group of phosphatids. Proliferative processes take place, it seems, only in a very early stage of the development of the corpus luteum. The organization of the epithelial lutein layer takes place at the expense of the capillaries and connective-tissue fibers of the theca interna and especially of the theca externa. At the time of maturity of the corpus luteum every lutein cell is surrounded by capillaries and fibrils, the entire lutein layer is separated from the cavity by a newly formed connective-tissue layer. The essential thing in the degeneration of the corpus luteum is a marked proliferation of connective tissue in the lutein layer, and at the same time a fatty

degeneration and destruction of lutein cells. Ciaccio's method shows that the fat is formed at the expense of the phosphatids of the cell protoplasm. The newly formed connective tissue of the lutein layer contracts, undergoes hyaline degeneration, and becomes a corpus candicans or albicans.

As to the characteristic so-called epithelioid cells of the theca interna, the author denies the possibility of their transformation into lutein cells or into spindle-shaped connective-tissue cells. These cells undergo slow atrophy and finally disappear altogether. The corpus luteum of pregnancy is analogous to the corpus luteum of menstruation, and is distinguished by the presence of the so-called colloid bodies of the lutein layer, which the author never found in the menstrual corpora lutea. He has never observed a new ovulation during pregnancy. The earliest stage of development of the corpus luteum corresponds to the second and the beginning of the third week after the beginning of the last menstruation, from which the conclusion may be drawn that ovulation as a rule precedes menstruation.

H. JENTTER.

**Fenger, F.: Distinction between the Corpus Luteum of Ovulation and the True Corpus Luteum of Pregnancy; Preliminary Report.** *J. Am. M. Ass.*, 1914, lxii, 1249. By Surg., Gynec. & Obst.

Fenger collected ovaries from 700 non-pregnant and 689 pregnant cows during the late fall months, when cattle as a rule are in excellent health and all stages of pregnancy are plentifully in evidence. Three hundred and sixteen corpora lutea were secured from non-pregnant animals and 692 from the pregnant, in 3 instances a single ovary containing 2 separate yellow bodies of equal size. The corpora lutea were studied chemically, not histologically, and the results set forth in a detailed table. These reports show that the corpus luteum of pregnancy is larger and shows a greater variation in size than the corpus luteum of ovulation. In the desiccated fat-free gland substance it is noted that the nitrogen, and consequently the protein as well as the ash and total phosphoric acid contents, are slightly higher in glands from non-pregnant animals than in the true corpora lutea of pregnancy. These differences are of doubtful significance, however, in determining the therapeutic value of the two varieties of the corpus luteum. The active principle is present undoubtedly in the glands in organic combination and closely associated with the protein complex. Investigation along the line of this research is to be continued. Tests for epinephrin were negative in both varieties and the glands gave nothing more than a faint indication of the presence of iodine.

CAREY CULBERTSON.

**Fullerton, W. D.: Fibroid Tumors of the Ovaries.** *Surg., Gynec. & Obst.*, 1914, xviii, 451.

By Surg., Gynec. & Obst.

The author agrees with other writers in the belief that pure fibromata of the ovaries is very rare,



constituting only two or three per cent of the solid tumors of these organs, the latter comprising but a small percentage of ovarian tissue.

Ovarian fibromata occur most often during menstrual life; they vary in size from mere granules to huge tumors weighing as much as forty pounds, and are the result of an hypertrophy of pre-existing ovarian stroma. The increase in size is slow and usually symmetrical, giving a smooth, firm, ovoid tumor, though occasionally they may be nodular.

They closely resemble uterine fibroids in the gross, and also on section, being tough, somewhat elastic, milky white in color and presenting the whorl-like texture of the former on section. They are subject to the same degenerations and transformations as are the uterine fibroids.

Encapsulation is almost invariably present, and this is a very important sign in differentiating from sarcomata, with which they are most apt to be confused. Here the age of onset and rapidity of growth are also important, being earlier and more rapid with sarcoma.

The case reported showed, microscopically, interlacing bundles of hypertrophied connective-tissue fibers, more or less compact, the nuclei of which were large, rounded or oval, stained uniformly and evenly, and showed no evidence of direct or indirect division.

**Michalowski, I. O.: Study of Call-Exner's Bodies** (Ein Beitrag zur Lehre von den Call-Exnerschen Körpern). *Dissertation*, Moscow, 1914.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author performed his experiments on rabbits. In young rabbits no Call-Exner bodies could be demonstrated. They first appear in animals 11 weeks old and reach their highest development at the period of sexual maturity. The further development of the bodies was followed by removing an ovary and examining it microscopically, and after the lapse of a certain time removing the other ovary and examining it microscopically. The Exner's bodies were found to show a cyclical development, the maximum being attained at the time of menstruation while the bodies disappeared entirely during pregnancy. The development of the bodies requires a month and a half in rabbits. He also found that they are more markedly developed during the summer months than during the winter.

As marked development of the bodies and hyperæmia of the pelvic organs were always observed in conjunction, the author tried to produce artificial hyperæmia. Ovaries of other rabbits were transplanted to the abdominal cavity, and in further experiments extract of ovary injected. Though the results were not absolutely uniform, yet they showed that these manipulations produced an increase in size and number of the Exner's bodies. The author assumes hypothetically that the Exner's bodies produce a hormone that causes hyperæmia of the pelvic organs and prepares the mucous membrane of the uterus for the implantation of the ovum.

If impregnation takes place the embryo produces hormones which affect the cells of the corpora lutea in such a way that the hyperæmia of the uterus is preserved. He proposes to give up the meaningless name "Exner's bodies" and substitute that of "Exner's vesicular glands."

VON HOLST.

**Palmer, C. D.: Prolapse of the Ovary; Its Rational Management.** *Am. J. M. Sc.*, 1914, cxlvii, 561.

By Surg., Gynec. & Obst.

In discussing prolapse of the ovary, Palmer states that a prolapse is a morbid entity only when alterations in the position are persistent and unalterable by natural efforts, and when they become the sources of pelvic discomfort and constitutional disturbances. He discusses the etiology and symptomatology and suggests the following treatment:

(1) Obviate constipation, by diet and laxative waters. (2) Readjust the clothing so that there is no compression about the waist. (3) Knee-chest position, night and morning. (4) Constitutional treatment such as tonics, etc. (5) Mechanical supports for the ovary, as tampons. (6) Surgical treatment, when resorted to, should always be by the abdominal route; in this way the condition of the ovary can be ascertained and if necessary oöphorectomy may be done. (7) Some cases also do well with foradic and galvanic electrical treatments.

EUGENE CARY.

**Kriwsky, L.: Surgical Treatment of Inflammatory Diseases of the Adnexa** (Zur chirurgischen Behandlung der entzündlichen Adnexerkrankungen).

*Vruch. Gaz.*, 1914, vi, 215.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In the gynecological section of the Municipal Hospital of St. Petersburg from 1910 to 1913, inclusive, about 24,000 patients were treated, among whom 3,683 or 15.2 per cent had inflammatory diseases of the adnexa. The greater part of these, about 200, were treated by incision of the posterior fornix, or in some cases of the anterior fornix. Laparotomy was performed 19 times for the removal of purulent adnexa, 17 times for acute diffuse peritonitis, originating in a purulent inflammation of the adnexa. Operation was performed 51 times for chronic inflammation of the adnexa, 48 times by laparotomy and 3 times per vagina. Emphasis was laid on preserving the organs of the patient as far as possible; the uterus was removed in only a few cases. The prognosis in chronic non-purulent cases was good. In the severest cases, that is, those with acute diffuse peritonitis, the number of deaths was comparatively low—35 per cent. A. WERTH.

#### EXTERNAL GENITALIA

**Eden, T. W.: A Case of Superior Rectovaginal Fistula.** *J. Obst. & Gynec. Brit. Emp.*, 1914, xxv, 175.

By Surg., Gynec. & Obst.

The author reports a case of high rectovaginal fistula that was operated upon by the abdominal

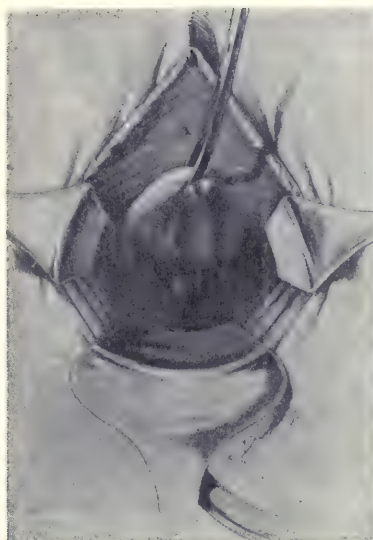


Fig. 1.

Fig. 1 (Eden.) The fistula exposed per vaginam, showing the rectal bougie in position.

(NOTE.—The anterior cervical lip is disproportionately large, and its level too low in the drawing.)



Fig. 2.

Fig. 2 (Eden.) The abdominal operation. The isolation of the uterus and the upper part of the vagina has been completed, and the floor of Douglas's pouch has been opened up. The adhesions immediately above the



Fig. 3.

fistula have been exposed by pulling the uterus upwards. The anterior peritoneal flap has been stitched to the skin concealing the bladder.

Fig. 3 (Eden.) The dissection has been carried farther and the fistula divided through its lower border and the rectum separated from the vagina for an inch further down. The lateral margins of the rectal opening are held by dissecting forceps.

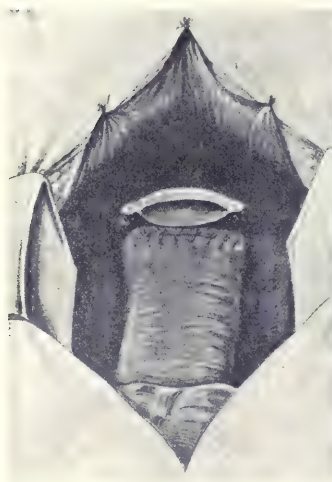


Fig. 4.

Fig. 4 (Eden.) The rectal opening has been closed by a series of sutures set at right angles to the line of the gut. The uterus has been amputated and ligatures have been placed at the sides of the vagina.



Fig. 5.

Fig. 5 (Eden.) A flap has been prepared from the poste-

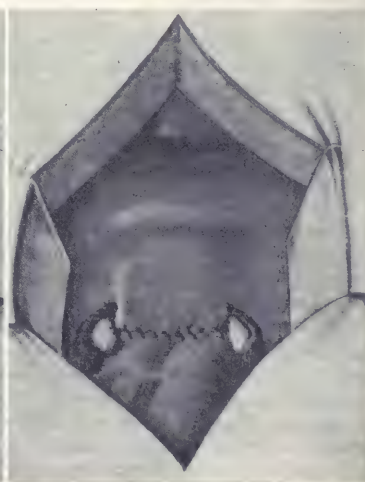


Fig. 6.

rior vaginal wall and stitched to the rectum so as to cover the site of the fistula.

Fig. 6 (Eden.) Peritonization of the pelvic floor has been completed by stitching the anterior peritoneal flap to the rectum.



route after a preliminary colostomy. Four weeks after the closure of the fistula the continuity of the pelvic colon was restored, the patient making a satisfactory, though not uneventful, recovery.

The author divides rectovaginal fistulæ into three groups according to their situation: (1) Rectovulval fistulæ; (2) inferior rectovaginal fistulæ involving the lower half of the vagina; (3) superior rectovaginal fistulæ involving the upper half of the vagina.

With regard to causation, it may be stated briefly that rectovaginal fistulæ may be due (1) to direct injury to the rectum during a vaginal operation, and it appears that in vaginal celiotomy for acute suppurative conditions the risk of injury to the rectum is most to be feared — at any rate, most of the recorded post-operative cases have followed this procedure; (2) to direct laceration of the rectovaginal septum in labor; (3) to rupture of a pelvic abscess into both rectum and vagina; (4) to ulceration from syphilitic or tuberculous disease of the rectum, or from a neglected pessary or other foreign body in the vagina.

The advantages of the various routes for operation are discussed in detail, with the following conclusions:

1. For those belonging to the group of rectovulval fistulæ, the method of direct suture is usually sufficient; posterior colporrhaphy may be done at the same time.

2. For inferior rectovaginal fistulæ a perineal operation is the most useful, and may be supplemented by complete or partial excision of the lower segment of the bowel, if necessary.

3. For superior rectovaginal fistulæ the abdominal route is probably the easiest and the best, and should prove not to be attended by disproportionate risks. In difficult cases, i. e., when the fistula is large and the parts are immobilized, a preliminary colostomy should be performed.

CAREY CULBERTSON.

### MISCELLANEOUS

Walker, F. E.: *The Induced Climacteric.* *J.-Lancet.*, 1914, xxxix, 181. By Surg., Gynec. & Obst.

During the past seven years a total of 106 operations were performed for the induction of artificial climacteric. Following a precise pre-operative and post-operative investigation of these patients the author is convinced that a masculine type in any form does not develop from the removal of any of the female sexual organs nor does any abnormal condition supervene other than would obtain in a perfectly natural menopause.

That a certain number of women so operated on will gain flesh is true, but the increased weight results from the removal of a diseased condition which prevented perfect nutrition. The operation simply restores the physiological equilibrium in the same manner as the removal of a diseased appendix, an enlarged and troublesome thyroid, or a dead kidney. Even where nutrition has not been interfered with by reason of disease in these organs, the tendency to an increased weight may be a family

characteristic or due to the age of the patient. The author thinks that ablation of the ovaries, tubes, or uterus does not tend to obesity other than as a healthy or physiological result; neither in his experience nor observation has it been noted. There is nothing to indicate an inclination to develop the masculine, either in vocal changes, gestures, locomotion, language, sexuality, or general appearance.

That the removal of any or all of the sexually diseased organs was a factor in producing insanity was not evident. Unfortunately, hereditary insanity developed in a few cases reported in the literature, but the operation upon and removal of a diseased organ was not and could not be responsible. Any number of women with acquired insanity have been entirely restored to health. In his series, one woman, who had been insane for years, and another, insane for five years, were completely restored to a normal mental condition.

Prolongation of climacteric symptoms, following the surgical menopause, was never observed, but exacerbation of such symptoms was quite evident in the majority of patients, especially in the highly nervous type and those between the ages of 30 and 38. After entering the climacteric age, the operation may cause an apparent change to an appreciable extent. The exacerbation of symptoms was most pronounced in those between 30 and 40 years of age, but these symptoms ended quickly.

It was questionable if there was any amelioration of symptoms when a whole or part of an ovary was left and the uterus removed. It softened the severity, but, on the other hand, no appreciable gain in the long run was noted. In those patients in whom a transplantation of ovarian tissue was made, a recovery analogous to conservation of tissue *in situ* was noted. It was not encouraging to leave ovarian tissue where severe infection necessitated the removal of the uterus and one tube and ovary, or the uterus alone. Five per cent of the patients formerly operated on with the idea of leaving some of the tissue, which looked healthy, were reoperated on within a year. During the past four years it has been the author's practice to treat severe infection in the most radical manner and the result has been gratifying in every instance.

The author has reached the following conclusions after considering 84 cases in which the pre-surgical and post-surgical history were secured:

1. Thirty-five per cent gradually lost their sexual desire. After operation sexual desire returned in 34 per cent with improvement in all.

2. Twenty per cent were possessed of abnormal sexual desire and about 5 per cent of these were perverts—some mild, a few severe. Operation relieved about one-half, but in three cases of severe perversion no improvement was noted.

3. In 55 per cent, therefore, there was a deviation from normal in the sexual appetite due entirely to diseased conditions; and all were benefited in this respect, except the advanced perverts.



4. The removal of the uterus, tubes, and ovaries increased the sexual appetite almost immediately, but this gradually diminished year by year. With the removal of the uterus only, the appetite assumed a more normal and constant aspect, while the removal of the ovaries seemed to lessen it during the first few months, followed by a gradual return to normal. Depressing mental effects from ablation of the ovaries was much more noticeable than when the uterus alone was removed. When the uterus and ovaries were removed, there was much less depression than when the ovaries alone were taken out. The depression was accounted for as being due to the mental or physical impression upon the sensitive female organization, as most women felt that they were sacrificing the greatest blessing of wifehood and motherhood. It was noticeable in women who did not desire a family that complete and radical operation never depressed them, that the intercurrent symptoms of induced menopause were rather insignificant, that a hopeful convalescence ensued, and that mental and physical vigor was a constant and characteristic result.

EDWARD L. CORNELL.

**Von Graff, E.: The Thyroid and the Genital Organs** (Schilddrüse und Genitale). *Arch. f. Gynäk.*, 1914, cii, 109.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Freund found coincidence of pregnancy and goiter in 90 per cent of cases; Von Graff examined 654 women during the second half of pregnancy to test the frequency of this coincidence. He found it in 44 per cent of the cases among the women of Vienna and in 49 per cent in other women. An increase during pregnancy was found in only 7 per cent. In comparison with 500 non-pregnant women there was an increase of only 9 per cent in the positive cases in pregnancy, 15 per cent in women of Vienna. The regular increase in the size of the thyroid during labor that Freund found constantly Von Graff found in only 35 per cent of the cases. The latter could not find an increase at the end of the first week in connection with lactation; rather the swelling of the thyroid decreased continuously during the puerperium, though sometimes incompletely, so that a permanent enlargement remained.

After a detailed discussion of some cases of pregnancy complicated by pathological goiters the author takes up the question of the effect of goiter on metabolism. Among 499 pregnant women he found spontaneous glycosuria in 13.8 per cent; among the women with goiter in 15.8 per cent and those without goiter in only 11.2 per cent. The difference was more pronounced in alimentary glycosuria, 58 per cent in patients with goiter, 24 per cent in those without it. Albuminuria was somewhat more frequent in women without goiter; 21.1 per cent as compared with 16.6 per cent. Giving ovarian extract had no effect on the size of the goiter. Freund's assertion that goiter frequently appeared during the climacteric was rejected, as

well as his claim that goiter often coexists with myoma.

HAMM.

**Veit, J.: Eugenics and Gynecology** (Eugenik und Gynäkologie). *Deutsche med. Wchnschr.*, 1914, xl, 420.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Veit reports a cesarean section in a 36-year-old chondrodystrophic dwarf with the delivery of a normal, well-formed child, and on the same day the delivery of an anencephalus by a normal 18-year-old girl. On the basis of these cases he opposes the demand of Hirsch that the obstetrician should take eugenics into consideration more than has heretofore been done, and that patients with hereditary taint should be sterilized. He then discusses the theoretical principles of eugenics in relation to psychosis, epilepsy, imbecility, chronic alcoholism, infectious diseases, especially tuberculosis and syphilis, marriage of relatives, etc., and says that it is well known that injury to the descendants may occur from disease and inherited predisposition from the parents, but that this does not necessarily occur. He doubts whether it is justifiable to draw such practical conclusions from this teaching, as, for example, the forbidding of marriage, and thinks it would be better to inculcate eugenic principles in the knowledge, customs, and moral conceptions of the people than to forbid marriage. Sterilization and artificial abortion from eugenic indications, he believes, are measures that at present cannot be shown to be necessary on scientific grounds. So long as the study of heredity has not shown when inherited taint must lead to injury of the descendants, he thinks no such serious measures should be taken.

KLEIN.

**Schmitz, H.: Massive X-Raying in Gynecology.** *Surg., Gynec. & Obst.*, 1914, xviii, 516.

By Surg., Gynec. & Obst.

The author reviews the biological foundation of gynecological radiotherapy, minutely describes the technique and its results on the treatment, cites the methods used by Albers-Schönberg, Gauss, and himself, and finally dwells on the different gynecological diseases which may be subjected to raying and gives the indications for the treatment.

His technique is as follows: Focal distance 20-22 cm., 3mm. aluminum filter, current of 4 to 5 ma., water-cooled tubes of 9 to 12 Wehnelt, 6 to 12 fields, each of 5 sq. cm. Each field is rayed twice during a series of six daily sittings and an amount of 8 to 10X is applied to each field. The total amount during one series is from 120 to 240X. An intermission of three weeks is taken between series. The skin is compressed by a tube and the intestines are displaced by a slight elevation of the pelvis.

Metropathia hæmorrhagica, chronic metritis, myoma uteri, pruritus vulvæ, adnexal inflammation, and dysmenorrhœa, have been successfully treated. Malignant disease of the pelvic organs was never benefited by massive raying.



**Hölder, H.: Irradiation in Gynecology** (Über Strahlenbehandlung in der Gynäkologie). *Med. cor.-Bl. d. würtemb. ärztl. Landesver.*, 1914, lxxxiv, 105.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The Tübingen Gynecological Clinic in general follows Gauss' technique but avoids the extraordinarily high doses. Submucous myomata, those with a foetid discharge or necrosis and those with symptoms of incarceration are excluded from treatment. Among 53 cases of myoma and climacteric hæmorrhage, the uterus had to be removed once because the hæmorrhage did not stop. On operation a submucous necrotic myoma as large as a fist was found. Good results were also obtained in some cases of genital tuberculosis. With röntgen treatment alone unsatisfactory results were obtained in the 26 cases of cancer of the cervix, which were almost all in an advanced stage. Nor were the results changed much when 22 mg. of radium bromide were used.

GOLDSCHMIDT.

**Klein, H. V.: Value of Hydrotherapy in Gynecology** (Die Bedeutung der Hydrotherapie für den Gynäkologen). *Ztschr. f. physikal. u. diätet. Therap.*, 1914, xviii, 17.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A summary is given of the results obtained in the hydrotherapeutic section of Wertheim's clinic since its establishment a year and a half ago. Hydrotherapy is used as a prophylactic in healthy women, as a treatment for sick ones, and hygienically, for pregnant and puerperal women. Hydrotherapeutic treatments which have been begun can be continued during menstruation without any danger. During the first half of normal pregnancy Klein recommends tub baths, three to four times a week for ten or fifteen minutes at a temperature of 32° to 34°. They can be continued during the second half, but toward the end of pregnancy, he prefers shower baths.

Normally, irrigation of the vagina is superfluous; only if there is a yellow discharge from the vagina it must be disinfected with bichloride or lysol. He has had no experience with Zweifel's lactic acid irrigations, which should not contain 5 per cent, but only 0.5 per cent lactic acid. Hydrotherapy should not be employed in eclampsia; the results in pernicious vomiting were negative. In febrile diseases during the puerperium warm packs and cool baths are of value in reducing the high temperature. In parametric exudates and chronic inflammatory tumors of the adnexa mud baths are recommended, in pruritus vulvæ and beginning kraurosis warm douches of the pelvis and carbonic acid baths.

HAMM.

**Schaeffer, R.: The Frequency, Causes, and Treatment of Sterility in Women** (Über Häufigkeit, Ursachen und Behandlung der Sterilität der Frauen. Ein statistischer Beitrag). *Ztschr. f. Bekämpfung d. Geschlechtskrankh.*, 1913, xv, 39.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Among 5,196 married women of the laboring classes in Berlin who visited the polyclinic, 500 or 9.6

per cent, were primarily sterile, while 595, or 11.5 per cent, were childless. The determination of the potency of the husbands of women with gynecological diseases is difficult, as many of the men refuse the examination.

Reports as to the frequency of gonorrhœa in sterile women vary widely. Some authors demand demonstration of gonococci for diagnosis, while others consider the clinical diagnosis sufficient. In many cases of chronic gonorrhœa the gonococci cannot be demonstrated, and the presence of inflammatory diseases of the adnexa in sterile women may be regarded as practically a proof of gonorrhœa. The pathological causes given as causes for sterility can generally be regarded only as probable causes or as factors that have been found by experience to render conception difficult.

Among the 451 women in Schaeffer's clinic with primary sterility, 304, or 67.3 per cent, suffered from gonorrhœa or from inflammatory diseases of the internal generative organs that were to be attributed almost exclusively to gonorrhœa. Acquired causes of sterility are far in excess of congenital ones. Among 378 cases of women secondarily sterile, 271, or 71 per cent, suffered from gonorrhœa or inflammatory diseases of the genital organs.

The best results were obtained from treatment in uncomplicated stenosis of the cervix, endometritis, dysmenorrhœa, and retroflexion, but even in gonorrhœa, treatment if begun early and carried out carefully was successful in a part of the cases. Therefore, early diagnosis of the cause of sterility is essential in order to begin treatment early.

KÖHLER.

**Kakuschkin, N. M.: Exploratory Puncture in Exudates and Different Collections of Fluid in the Pelvis** (Beobachtungen über die Probepunktion bei Exsudaten und verschiedenen Ansammlungen im Becken). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, xxviii, 1783.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author has used exploratory puncture for diagnostic and therapeutic purposes in different inflammatory processes of the adnexa and pelvic cellular tissue, except in violent acute cases such as retrouterine hæmatocele, and comes to the following conclusions: (1) The puncture in many cases causes a fall in temperature and hastens the absorption of the products of inflammation. (2) The action of the puncture in lowering temperature and hastening absorption is explained partly by changes in the circulation in the area of the puncture on account of the hyperæmia caused by the puncture and partly by the removal of some of the contents of the inflamed focus. (3) He uses puncture systematically in the treatment of old pelvic exudates. (4) In fresh cases with a highly virulent exudate the temperature may rise after the puncture, because the microbes from the focus of infection are transmitted to the general circulation through the trauma caused by the puncture.

GINSBURG.



**Gerdes, I. U.: A Case of External Female Pseudohermaphroditism** (Ein Fall von Pseudohermaphroditismus femininus externus). *Hosp.-Tid., Kjøbenhavn.*, 1913, vi, 1391.  
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

A 43-year-old unmarried woman had nephrectomy performed for kidney tuberculosis on the right side. She died the day after the operation of embolus of the pulmonary artery. The post-mortem showed the following conditions: Thorax of masculine form; mammary glands not developed; pubic hair of masculine type; clitoris 5 cm. long with a marked prepuce, corona, and retro-glandular sulcus; on the lower side of the clitoris there was a furrow which continued into a canal into which both the vagina and the prostatic part of the urethra emptied; the prostate was well developed, the vagina broad and roomy and 6 cm. long; the uterus was also well developed, 6 cm. long with a smooth mucous membrane; and the ovaries were oval, and of the normal size. There were no corpora lutea, no cysts, and no depressions showing ruptured follicles on the surface. The adrenals were very large, the right one being 8 cm. broad, 5 cm. long and  $2\frac{1}{2}$  cm. thick. Little was known of the mode of life and character of the patient, but as a child she had generally played with boys. She took no interest in feminine activities, and had never had an intimate relation with either a man or a woman. In the hospital where she was placed with other women patients she showed a great interest in them, so that it would seem that her feelings were homosexual.

S. A. GAMMELTOFT.

**Jachontoff, A.: Transverse Incision of the Abdominal Fascia in Gynecological Laparotomies** (Zur Frage des Fascienquerschnittes der Bauchwand bei gynäkologischen Laparotomien). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, xxviii, 1675.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb

The author reports 160 gynecological operations with Pfannenstiel's transverse incision of the fascia. The skin incision is arched and 9 cm. long. There is a transverse incision of the aponeurosis and the upper edge is dissected with a blunt instrument. At the linea alba where the edges of the recti touch, the aponeurosis is dissected with a knife. Large tumors may be removed in this way, solid ones piecemeal, cysts by being punctured. The lower edge of the wound allows a good view of the true pelvis, which is generally necessary in gynecological operations. Hæmatomata are avoided by careful ligation. The coils of intestine are under the diaphragm and covered with omentum, the patient being in the Trendelenburg position. The transverse incision prevents post-operative hernias, and

the cosmetic result is more satisfactory than in the longitudinal incision. The author believes in extending the indications for the transverse incision.  
GINSBURG.

**Kelly H. A. and Dumm, W. M.: Urinary Incontinence in Women, without Manifest Injury to the Bladder; A Report of Cases.** *Surg., Gynec. & Obst.*, 1914, xviii, 444.

By Surg., Gynec. & Obst.

The authors report the results of a series of 20 cases of urinary incontinence operated upon in the Gynecological Clinic of the Johns Hopkins Hospital and Kelly's Sanatorium. Various methods of treatment for urinary incontinence both palliative and operative are reviewed. For thirteen years Kelly has adopted an operative procedure which is as follows:

1. With a small Pezzer catheter in the bladder as a guide a median incision about 3.5 or 5 cm. long is made in the anterior vaginal wall, the neck of the bladder falling at about the center of the incision.
2. The bladder and urethra are detached from the vagina by blunt dissection so that the finger is able to grasp one-half or two-thirds of the neck of the bladder, including the contiguous urethra.
3. The tissues at the vesical neck are brought together by two or three transverse mattress sutures of fine linen or silk. The mushroom catheter is then removed, the head of the catheter escaping with a jump as it clears the reconstructed sphincter area.
4. The redundant vaginal walls are resected so that the remaining tissues can be snugly approximated from side to side, thus supporting the vesical area operated upon and avoiding dead space.

Fowler's position is assumed immediately following operation, but catheterization is not done unless imperative. The patient is up on the fourth day, providing it has not been necessary to combine some other procedure with the one described. Eighty per cent of the cases operated upon proved successful.

The following conclusions are noted:

1. There is a type of urinary incontinence in women with no manifest injury to the bladder, which is due to an impairment of function of the sphincter muscle at the internal orifice of the urethra. It is most common among multiparæ in the fourth decade.

2. The operation as performed by Kelly is the most satisfactory thus far suggested for this type of incontinence. Entire control is given in a large percentage of cases by means of a mechanical restoration of the sphincter area at the vesical neck.

The operation may be done under local or general anæsthesia. The post-operative treatment is simple.



# OBSTETRICS

## PREGNANCY AND ITS COMPLICATIONS

**Eisenreich, O.:** *Biological Study of Normal Pregnancy and Eclampsia, with Special Consideration of Anaphylaxis* (Biologische Studien über normale Schwangerschaft und Eklampsie mit besonderer Berücksichtigung der Anaphylaxie). *Samml. klin. Vortr.*, 1914, No. 694, 669.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author tried experimentally to solve the question of whether eclampsia is to be regarded as an anaphylactic phenomenon. He sketches the historical development of the theory of eclampsia, the last stage in which he conceives eclampsia to be due to anaphylactic shock, discusses the principles of anaphylaxis and the theoretical possibility of the appearance of anaphylaxis in pregnancy, that is an anaphylactic reaction of the maternal organism to foetal albumen.

The attempts to prove the anaphylactic nature of eclampsia by the methods heretofore in use have not given decisive results. The author therefore tried to decide the question by the passive transmission of hypersensitiveness. He sensitized guinea pigs by the intraperitoneal injection of maternal serum; after 24 to 36 hours he gave an intravenous re-injection with foetal serum. Of fifty guinea pigs treated in this way with maternal and foetal serum, 41 showed no symptoms; 9 showed non-characteristic pseudoanaphylactic symptoms. Sixteen guinea pigs that had been treated with the serum of eclamptic mothers and their children showed the same symptoms. Not a single animal died of shock. These experiments show that eclampsia is not an anaphylactic phenomenon. Also experiments made by the author in regard to the condition of complements in normal and eclamptic pregnant women do not support the assumption that there are anaphylactic relations between mother and child. But the complement experiments show clearly that in eclamptic patients biological processes are taking place that seldom or never occur in the normal pregnant woman. The complement content of the serum of a normal woman is practically constant, while that of the eclamptic woman shows great variations, which, however, are by no means uniform. Experiments with the complement-fixation reaction showed that there was no antibody reaction between the mother and child. The details of the experiments must be read in the original. LAMPÉ.

**Peters:** *Duration of Pregnancy* (Schwangerschaftsdauer). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 329.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

It is known now that ovulation generally takes place 18 to 19 days after the beginning of the last

menstruation. We can, therefore, determine with greater certainty the beginning of pregnancy. In cases where coitus has taken place regularly, rupture of the follicle and beginning of pregnancy are almost synchronous. The date of birth may be delayed 5 to 7 days by the possibility that the ovum may have been impregnated during its migration. The cases where there has been only a single coitus should be examined for this point. The duration of pregnancy should be reckoned from many thousands of cases with normal mature foetuses and a definite knowledge of the date of beginning of the last menstrual period. L. HIRSCH.

**Findley, P.:** *Ectopic Pregnancy*. *Med. Fortnightly*, 1914, xlv, 152. By Surg., Gynec. & Obst.

Two phases of the subject of ectopic pregnancy are of special interest, i. e., (1) diagnosis before rupture of the gestation sac, and (2) immediate versus deferred operation for intra-abdominal hæmorrhage.

Findley believes that early diagnosis is very seldom positively made. Ectopic pregnancy should always be considered in women of the child-bearing age with pelvic disorders, especially in those with a history of tubal infection some years back. Also, in women whose periods are from four to twenty days overdue, followed by a dark clotted flow, the condition should be considered.

The initial hæmorrhage which follows rupture of the tube is not as a rule great, but the attending shock may be profound. Every means should be used to restore this patient to a better condition, but should secondary hæmorrhage follow, an operation should immediately be performed with all possible speed.

Before rupture the only safe procedure is removal of the pregnant tube. Late after rupture only vaginal drainage is, as a rule, necessary.

EUGENE CARY.

**Fries:** *Unusual Forms of Ectopic Pregnancy* (Über seltener Formen ektopischer Schwangerschaft). *Deutsche med. Wchnschr.*, 1914, xl, 202.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports two cases of his own of ovarian and peritoneal pregnancy. In one case the left ovary, transformed into a blood cyst, lay in Douglas' pouch. Villi could be demonstrated in it microscopically. In the second case the ovum was located at the seat of the appendix which had previously been removed; it was a blood nodule as large as a walnut and was covered in an apron-like fashion by omentum. The cavity of the ovum with the embryo and villi could be demonstrated microscopically. The author regards both cases as genuine. RUNGE.



**Beckmann, W. G.: Two Cases of Extra-Uterine Pregnancy Persisting after Rupture of the Pregnant Tube and the Pregnant Uterus** (Zwei Fälle von progressierender Extrauterin gravidität nach Ruptur der schwangeren Tube und des schwangeren Uterus). *Zischr. f. Geburtsh. u. Gynäk.* 1913, xxviii, 1850.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The first case was a 35-year-old VI-para, whose last delivery was 7 years previous. For four months she had had increasing pain in the abdomen. In the left lower quadrant was an irregular tumor. The uterus, displaced to the right, could not be palpated. No foetal movements or foetal heart sound could be discerned. Laparotomy was performed, and old blood found in the abdominal cavity. The foetus was found in the left side of the abdomen with the membranes adherent to the intestine and omentum. The placenta was located on the sigmoid flexure and omentum. In loosening the placenta from the intestine the serous membrane was injured. Death occurred on the fourth day from peritonitis. The foetus was 33 cm. long, the head flattened; there was torticollis and talipes calcaneovalgus.

The second case was a 36-year-old VI-para, whose last delivery was three years before. The abdomen was the size of a full-term pregnancy; the uterus was enlarged; and there were foetal movements and heart sounds. The clinical diagnosis was either intra-uterine or extra-uterine pregnancy with adhesions to the fundus of the uterus. Laparotomy was performed and the omentum was found adherent to the abdominal wall. Back of the omentum the living foetus was found in the left lumbar region with the legs in the right hypogastrium. The placenta was very large, situated on the fundus of the uterus, and adherent to it were the omentum and the intestines. The membranes were open on the upper side, the legs lay between the coils of intestine. Because of the adhesions only a part of the placenta could be resected; the other part was sutured to the parietal peritoneum. The abdominal wound was drained.

The child was 48 cm. long and weighed 2,550 grams. On the right upper arm there was a scar showing a healed fistula. There was contracture of both elbow-joints. The patient died on the sixteenth day of peritonitis. There was a rupture 13 cm. long in the left side of the uterus. The cavity of the uterus contained old blood. The opening indicated a rupture of the uterus in the early months of pregnancy. The further development of the foetus took place in the abdominal cavity. This case shows the danger of such persisting extra-uterine pregnancies; the adhesions of the placenta to the intestine cause injury of the latter, and leaving the placenta often causes peritonitis and death.

GINSBURG.

**Graefe: Primary Pregnancy in the Omentum** (Primäre Netzschwangerschaft). *Zentralbl. f. Gynäk.* 1914, xxxviii, 46.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In the case reported the left tube was normal; in the right there was a hæmatocele as large as a fist.

The ovary and tube were removed and found macroscopically normal. Microscopic examination of the tube showed none of the changes of pregnancy. In the omentum, which was otherwise normal, there was a bluish nodule, as large as a walnut, containing blood-clots and chorionic villi. The villi were close to the omentum but not connected with it by syncytium or Langhans' cells.

RUNGE.

**Kerr, J. M. M.: Toxæmias of Pregnancy and Their Effects upon Maternal and Infantile Mortality; with Suggestions as to How the Association and the Public Health Department Might Assist in Lessening the Death Rate from Complications of Pregnancy and Parturition.** *Pediatrics.* 1914, xxvi, 170.

By Surg., Gynec. & Obst.

In a concise way the author attempts to show that reporting of pregnancy should be made compulsory, in order that the maternal and infantile death rate resulting from toxæmias of pregnancy and other complications might be lowered. He states that in the Indoor Department of the Glasgow Maternity Hospital during the years 1901-1910 inclusive there were 293 cases of eclampsia; of these, 88 mothers died, a maternal death rate of 30 per cent. As regards the children, 208 were born dead or died, an infantile mortality of 70 per cent. Several of the mothers developed chronic Bright's disease; and among the children who lived, several died shortly after birth, and many were premature, poorly nourished, and started life very much handicapped. As evidence, he says the average weight of the children was only five and three-quarters pounds.

In the same hospital, during the same ten years, there were 121 cases of albuminuria, with a maternal mortality of 7, or 5.8 per cent, and an infantile mortality of 33, or 27.2 per cent. The author states that the above statistics go to show that if pregnant women were treated while they had albuminuria, and especially early, a great number of maternal and infantile lives would be saved. He is of the opinion that the only solution of this problem is to have the public health department take charge of it and require reporting of pregnancy as they do with infectious cases; this would assist the poorer class of people and better enable them to receive the proper kind of advice at the right time. WM. D. PHILLIPS.

**Haughton, S.: The Prophylaxis and Treatment of Pre-Eclampsic Toxæmia and Eclampsia.** *Indian M. Gaz.*, 1914, xlix, 137.

By Surg., Gynec. & Obst.

"As prevention is better than cure, it follows that the importance of prophylactic treatment cannot be too urgently insisted upon." As a means of accomplishing the above the author suggests that most careful attention should be paid to the patient's general condition. The following symptoms, if complained of, should be investigated at once: (1) Headache, (2) disturbances of vision, (3) nausea, vomiting, and constipation (great care being taken to insure a daily evacuation of the bowels), (4) gastric pain,



(5) oedema of the limbs. He says that pre-eclamptic toxæmia usually appears in the second half of pregnancy, and but rarely in its later months.

The treatment suggested for pre-eclamptic toxæmia consists in putting the patient to bed; for the first 24 hours, giving only water and a large dose of epsom salts; should the patient's condition remain the same, bleeding and hypodermoclysis of saline solution should be resorted to. In spite of the above, should the symptoms grow worse, the author suggests emptying the uterus and the use of the following working rules: (1) If the patient is in labor and the cervix nearly fully dilated, the dilatation should be completed, version done, or forceps applied. (2) If the patient is not in labor palliative treatment should be tried, and if after two or three hours the progress of the disease is not arrested, the uterus should be emptied by dilatation of the cervix after Harris's method or by either vaginal hysterotomy or cesarean section, vaginal hysterotomy being the operation of choice during the early months of pregnancy. Gastric lavage, bleeding, injections of salt solutions, etc., should be used to eliminate the poisons, most careful attention being paid to the diet. WM. D. PHILLIPS.

**Aschner, B.: Retrograde Amnesia Following Eclampsia** (Über die posteklamptische Amnesie). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxv, 405.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author observed two cases of true retrograde amnesia following eclampsia, the loss of memory extending from several weeks to a year before the beginning of the attacks. The amnesia bore no relation to the number of the attacks. It was probably a deep-seated disturbance of the bonds of association between individual facts, not a complete loss of the elements of consciousness involved (Von Strümpell), for many memories returned with the freshening of the associations. Probably closer examination will reveal the fact that retrograde amnesia is a regular feature of the symptom-complex of eclampsia.

DORN.

**Danforth, W. C.: Cesarean Section, with Report of Fourteen Cases from the Services of Drs. Parkes and Danforth.** *Illinois M. J.*, 1914, xxv, 213.  
By Surg., Gynec. & Obst.

This article is a short review of the literature with a brief report of 14 cesarean sections. They were performed for the following indications: Ovarian cyst, 1; placenta prævia, 3; rigid cervix and deficient powers, 1; absolutely contracted pelvis, 1; eclampsia, 5; slight pelvic contraction, 2; uterine inertia, 1.

CAREY CULBERTSON.

**Barris, J.: The Treatment of Pregnancy Complicated by Morbus Cordis, by Means of Cesarean Section under Spinal Anæsthesia.** *J. Obst. & Gynec. Brit. Emp.*, 1914, xxv, 186.

By Surg., Gynec. & Obst.

Five cases of the above are reported, one of the author's and four from the literature. In the

author's case, section was the operation of choice for the following reasons: (1) To practice rapid delivery, some form of anæsthesia was necessary. (2) A general anæsthetic was contra-indicated owing not only to the valvular lesions, but to the condition of the cardiac muscle; therefore, some special method such as local or spinal anæsthesia was indicated. (3) Abdominal cesarean section was preferred to vaginal on account of the size of the child, and also because by the abdominal route a portion of both tubes could be removed and the patient be protected by rendering her sterile.

Stovaine, 0.1 gm., with dextrose, 0.05 gm., dissolved in 1 ccm. of sterilized water, was injected between the third and fourth lumbar vertebrae, followed by a second dose in twenty minutes. During the operation 1 ccm. of pituitary extract was injected and oxygen inhalation administered. The blood-pressure fell from 240 mm. Hg. to 160. Recovery was uninterrupted. The author makes these points in résumé:

1. It must be admitted that some cases of cardiac disease pass through labor unexpectedly well apart from this treatment.

2. On the other hand the method has the merit of great rapidity and of relieving the cardiac muscle of strain during the first and second stages of labor, thus diminishing the risks both of cardiac failure and of embolism.

3. Sterilization may be carried out at the same time.

4. There is no predisposition to uterine inertia, especially where pituitary extract is given immediately before making the abdominal incision.

5. The child appears to run no risk from asphyxia, crying at once after extraction.

6. No undue amount of shock was observed in the cases recorded.

7. The mental effect upon the patient is a possible drawback to the method. This may be minimized by administering morphia or scopolamine before the operation and by cocainizing the skin prior to the injection of the spinal anæsthetic.

CAREY CULBERTSON.

**Spalding, A. B.: Some Principles Governing the Indications for Cesarean Section.** *Calif. St. J. Med.*, 1914, xii, 152.  
By Surg., Gynec. & Obst.

The author reviews some of the factors governing the indications for cesarean section, tabulates his results in a series of 25 such operations, and discusses the results. In a series of over 700 private and hospital maternity cases he found contracted pelvis in less than 10 per cent of the women, and in but two of this number was the contraction of the conjugata vera  $7\frac{1}{2}$  cm. or less. Among his 25 cesarean operations, 10 were done for moderate degrees of pelvic contraction, 4 of these being done with perfect results to mother and baby after a severe test of labor had failed to cause the head to engage; 4 were done for pelvic tumor; 3 for placenta prævia, with perfect results to both mother and baby; 2 with



broken compensation; one with marked œdema of the legs, vulva, and abdomen; one for eclampsia; and one for hyperemesis gravidarum.

C. D. HOLMES.

**Hofmann, E.: Simultaneous Abortion and Tubal Sterilization** (Zur einzeitigen Aborteinleitung und Tubersterilisation). *Ztschr. f. Geburtsh. u. Gynäk.* 1913, lxxv, 320.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author recommends Guggisberg-Bern's transperitoneal, abdominal method for the simultaneous induction of abortion and tubal sterilization. A median incision is made in the uterus so that the ovum can be removed with slight pressure. The cavity is curetted and the wound sutured with continuous catgut sutures. The tube is tied off from its mesosalpinx and ligated 1 to 2 cm. from the angle of the tube with silk, and the stump is buried beneath the peritoneum with continuous silk-sutures. The drainage through the cervix recommended by Sellheim is considered superfluous. The results were excellent in 20 cases.

SCHÄFER.

**Ebeler, F.: Treatment of Abortion** (Zur Abortbehandlung). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxv, 411.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Ebeler reports the results of the treatment of abortion at the Cologne gynecological clinic for the past two years. Of 641 cases 76.9 were admitted in an afebrile condition, 23.1 per cent febrile. When abortion was imminent conservative treatment was employed with very good results, otherwise active treatment was used, without regard to the bacteriological findings, if the infection had not passed beyond the uterus. When possible, curettage with the finger was employed, sometimes supplemented by a large curette. Dilatation was accomplished with laminaria or Hegar tents.

Of the 493 afebrile cases 42 abortions were imminent and proceeded without fever; there were 7 artificial abortions, afebrile; 43 cases of endometritis after abortion; fever only once for a short time after curettage; 85 abortions in process, with slight rises of temperature in two cases; 316 incomplete abortions, 290 of them free from fever, 26 with fever afterward, tumors of the adnexa and parametritis. There was no severe illness and no deaths.

Of the 148 febrile abortions the fever quickly disappeared in 2 imminent abortions, 1 case of artificial abortion died of tuberculosis; 17 abortions in process recovered quickly from the fever except one. Of 123 incomplete abortions the fever promptly declined in 94, in 29 the fever continued with complications in some cases; 6 deaths, 4.9 per cent. Three of these were admitted in a desperate condition, 1 died of peritoneal tuberculosis, 1 of sepsis from criminal abortion, only 1 case could have been unfavorably influenced by the curettage. In conclusion the author recommends active treatment by digital curettage without regard to the bacteriological findings.

BONDY.

**Traugott, M.: Active and Conservative Treatment of Streptococcus Abortion and Its Results** (Aktive und konservative Behandlung des Streptokokkenaborts und ihre Resultate). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxv, 375.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Traugott firmly believes in the conservative treatment of streptococcus abortion. His statistics include all the cases from the Frankfurt gynecological clinic. Of 246 cases with obligate saprophytes, 195 were treated actively, 51 conservatively. Of 237 streptococcus abortions, 99 were treated actively and 138 conservatively. Of those actively treated the process remained confined to the uterus in 67.7 per cent, of the conservatively treated in 94.9 per cent. There were periuterine diseases and metastases in 14.1 per cent of the actively treated cases, and in 2.9 per cent of the conservatively treated ones. In the former there was 18.1 per cent mortality, in the latter 2.2 per cent. Deducting the criminal cases from the conservatively treated streptococcus abortions there remained 1 case of mild parametritis which recovered, and 1 of purulent peritonitis that died; that is 0.79 per cent mortality.

The active cases remained on an average 24 days in the hospital, the conservative ones 13.4. Of 76 cases of streptococcus abortion that were admitted free of fever, 40 were treated actively and 36 conservatively. Of those treated actively 47.5 per cent remained afebrile after treatment, 32.5 per cent had fever, 12.5 per cent had periuterine affections and metastases, 7.5 per cent died. Of those treated conservatively 80.6 per cent remained afebrile, 19.4 per cent had fever, there were no periuterine diseases and no deaths.

The conclusions are: Every case of abortion must be examined bacteriologically. Saprophytic cases should be treated actively at once, but streptococcus abortions should be treated conservatively; that is, with rest in bed, ice, avoidance of unnecessary examinations and manipulations, and after spontaneous evacuation of the uterus, curettage, which is then without danger. Dangerous hæmorrhage may constitute an indication for emptying the uterus, but it is rare. The fact that there is no fever does not prove that no virulent germs are present; only bacteriological examination establishes the prognosis. In streptococcus abortion even when afebrile the prognosis is doubtful. The conservative treatment is always to be preferred to the active in streptococcus abortion and does not increase the duration of the sickness, on the contrary, it requires great courage to proceed actively.

BISCHOFF.

**Hofmann, E.: Coagulability of the Blood and the Blood Count in Normal, Hyperthyroid, and Hypothyroid Women during Pregnancy and the Puerperium** (Zur Blutgerinnung und zum Blutbild bei normalen, hyperthyreotischen und hypothyreotischen Schwangeren und Wöchnerinnen). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxv, 246.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In pregnant women with normal thyroids the coagulation time of the blood is somewhat shortened.



In pregnant women with large, vascular, soft goiters there is no variation from the normal coagulation time. In pregnant women with hypothyroidism the coagulation time seems to be somewhat shorter than in normal pregnant women, but further research is necessary in order to determine this question definitely. In labor the coagulation time of the blood is reduced in about 50 per cent of the cases.

There is no difference between normal, hyperthyroid and hypothyroid patients. During the puerperium the coagulation time is gradually lengthened until it returns to normal. There is no difference in this particular in the three classes of patients. The blood count of normal pregnant women shows a slight leucocytosis, involving all the cell forms. In pregnant women with hyperthyroidism in about 40 per cent of the cases there is a slight absolute and relative lymphocytosis, which disappears immediately after delivery and reappears during the puerperium. In hypothyroidism the conditions seem to be normal. The freezing point of the blood of pregnant women is somewhat higher than that of non-pregnant ones. In hypothyroidism, there is no lowering as there is in the non-pregnant condition.

RUNGE.

**Austin, C. K.: On the Iso-serum Treatment of the Incoercible Vomiting of Pregnancy.** *Med. Rec.*, 1914, lxxx, 705. By Surg., Gynec. & Obst.

Austin details the theory of Fieuz of Bordeaux, regarding hyperemesis gravidarum, which states that during the period in which the chorionic villi flourish and up to the time when they all disappear except those which have given rise to the placenta, the syncytial cells covering the villi secrete a poison, which, when taken up by the maternal circulation, intoxicates the mother and produces the early vomiting of pregnancy. The presence of the toxin determines an antibody reaction and on the more or less prompt and effective response on the part of the maternal organism depends the degree of vomiting.

Iso-serum therapy depends upon the intravenous injection of blood from a non-toxic pregnant woman, whose pregnancy is of about the same duration as that of the patient.

The only drawback to the method is the difficulty of making certain that the blood of the donor is innocuous. To this end the Wassermann and tuberculin reactions should be studied.

EDWARD SCHUMANN.

**Von Bardeleben, H.: Principles of Treatment in Pregnancy, Complicated by Pulmonary Tuberculosis** (Die Prinzipien des therapeutischen Eingriffes bei Lungentuberkulose und Schwangerschaft). *Med. Klin. u. Therap.*, 1913, xii, 440.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Basic principles of treatment in pregnancy complicated by pulmonary tuberculosis are: (1) Old

healed, non-active tubercular processes in the lungs do not furnish an indication for abortion. The condition should be carefully watched, however, for there is a possibility of reactivation. (2) In pulmonary tuberculosis that can be demonstrated clinically abortion should be performed. In involvement of the apices up until the fourth month simply emptying the uterus is sufficient. (3) In advanced active processes in the lungs and in apical affections after the fourth month extirpation of the uterus is necessary in order to remove the site of the placenta. In all operations the general treatment must not be neglected.

GINSBURG.

**Ludwig, F.: Ileus in Pregnancy, Labor, and the Puerperium** (Ileus bei Schwangerschaft, Geburt und Wochenbett). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxv, 324.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports 96 cases of ileus. The cause was adhesive bands in 28 cases, volvulus in 13, large or retroflexed uterus in 10, once kinking of the mesentery and artery, tumor in 25 cases, obstructions in 7, invagination in 4, and hernia in 7. The small number of cases due to hernia is noteworthy. It may be said that pregnancy offers a certain protection against incarceration of hernia. Except in the cases of tubal pregnancy the complication appeared when the uterus began to emerge from the true pelvis. The number of cases increases toward the end of pregnancy, and a considerable number were observed during the puerperium. The pregnant or puerperal uterus is rarely a direct cause of the ileus. Diagnosis is very difficult and a careful history is important. The prognosis is very unfavorable. The mortality of the mothers was 55 per cent. In only a few cases has pregnancy continued to term and a living child born. Treatment is operative. In the early months of pregnancy an attempt should be made to preserve it; at the end of it immediate delivery should be performed.

BENTIN.

**Tylecote, F. E.: Jaundice of Pregnancy Associated with Jaundice in the Offspring.** *Med. Chronicle*, 1914, lviii, 465. By Surg., Gynec. & Obst.

The author reports a case of recurrent jaundice in eight successive pregnancies — eventually persistent with xanthoma and jaundice in all but the first of the eight children, fatal in six of the seven afflicted. The patient, 34 years of age, was admitted for persistent jaundice, accompanied by a marked xanthomatous condition which had started on the face and hands; she had been married when 18 years of age, and had since then borne eight children, of whom only the fifth was alive. Every child had been born prematurely. She had never suffered from jaundice before her marriage and in each pregnancy it appeared about the third month and increased until the end of pregnancy. All the children except the first, which lived only an hour, had jaundice; the other seven children all had jaundice,



six dying with convulsions due to it. The fifth child was the only one which recovered from the jaundice, and it was noted that it was the only one that was breast-fed.

WM. D. PHILLIPS.

**Vogt, E.: Significance of Kyphoscoliosis in Pregnancy, Labor, and the Puerperium** (Über die Bedeutung der Kyphoskoliose für Schwangerschaft, Geburt und Wochenbett). *Arch. f. Gynäk.*, 1914, cii, 60.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In cases of severe rachitic kyphoscoliosis of the spinal column the first menstruation generally appears late. Many primiparae have passed the thirtieth year. Spontaneous abortion and premature delivery is frequently observed. Symptoms of heart insufficiency frequently appear during the second half of pregnancy or even during labor that had not been observed in the non-pregnant state. In rare cases death occurred from heart failure during labor or a few hours afterward; most of the women did not die, however, during or soon after labor from heart disease, but during the puerperium from complicated lung diseases. If there is marked failure of compensation during pregnancy which does not yield readily to medical treatment, immediate artificial abortion is indicated, preferably vaginal or abdominal caesarean section. Operative delivery must not be delayed too long. The outlook for the children is not bad. The loss of blood in the third stage is generally increased. RUNGE.

**Goullioud: Pregnancy after Myomectomy** (Grossesse après myomectomie). *Lyon méd.*, 1914, 576. By Journal de Chirurgie.

Goullioud is a firm believer in myomectomy; his cases of fibroids number 648, in 74 of which myomectomy was performed and abdominal hysterectomy in 574, which gives 11 per cent of myomectomies. After these 74 myomectomies there were five cases of pregnancy, but out of the 74, 34 were single; there remain, therefore, 40 married women with 5 cases of pregnancy, or 12 per cent; and among these, 14 were past 40 years of age, so that pregnancy would have been rare without myomectomy. This leaves 26 married women under 40 years of age, 5 of whom became pregnant, or 20 per cent. This figure is still possibly too low, for 16 of the patients were not seen again.

There was no trouble in the development of the pregnancy and there were not more than 20 per cent of miscarriages. There was nothing abnormal during delivery. In short, the results of myomectomy are in general satisfactory, recurrences are rare, and, though pregnancy is not frequent, it is possible, and is worth the risk of a second operation ten years later.

In a recent thesis Benoit-Gossin, a pupil of Goullioud's has collected 99 cases of pregnancy after myomectomy and besides the cases given above, cites 2 unpublished cases of Pollosson and 4 of Témoïn.

R. LERICHE.

**Bondi, J. and Bondi, S.: Experimental Study of Kidney Changes in Pregnancy** (Experimentelle Untersuchung über Nierenveränderungen in der Schwangerschaft). *Arch. f. Gynäk.*, 1914, cii, 89. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

From their experiments on pregnant and non-pregnant animals the authors have come to the conclusion that the kidneys of pregnant animals are more sensitive to toxins. The functioning parts of the kidney are not equally affected. They found that there were marked differences in the reaction of different parts to uranium and chromium, while there were only slight differences with arsenic and cantharidin.

The epithelium of the urinary tubules and especially the convoluted tubules seems very easily affected in pregnancy. If conclusions can be drawn from animal experiments it is this sensitiveness of the epithelium that causes albuminuria in so many pregnancies. More pronounced disturbances may cause severe nephritis. Different causes may produce the injuries to the epithelium. As the etiology of parenchymatous nephritis is generally bacterial infection, frequently originating in the tonsils, in the nephritis of pregnancy this point should be considered. In some cases examination showed a preceding angina. The severe oedema that frequently appears early was regarded as the result of retention of chlorides. BENTHIN.

**Kaltenschnee: Function of the Ureter in Pregnancy** (Ureterfunktion in der Schwangerschaft). *Ztschr. f. Gynäk. Urol.*, 1913, iv, 186.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Kaltenschnee performed chromocystoscopy on 50 pregnant women who had no abnormal symptoms and, from the difference in time in the appearance of the first blue color and the difference in the intervals between contractions on the right and left sides, comes to the conclusion that there is a certain degree of physiological stasis of the urine in pregnancy, which is due to changes in the anatomical relation of the ureters to the surrounding parts. Under some conditions this may give rise to colic and pyelitis.

In only 18 per cent of the cases was there normal function with relation to the two points mentioned above. In 44 per cent the right ureter excreted later than the left, in 14 per cent the left later than the right; in three cases the right ureter was empty. The difference in time between the two was 14 to 15 minutes; the first blue color normally appears in about 14.4 minutes. The interval between contractions, which is normally about 30 seconds, was unequal in 29 cases, being delayed about 17 seconds on the right side. The cause of the stasis is the fixation of the ureter to the wall of the pelvis about 10 to 12 cm. above the opening into the bladder. By dextroposition of the uterus the interureteral ligament is twisted so that the trigone stands open toward the left; by this torsion the first right ureter is kinked and then the left. FRANK.



**Müller, B.: The Relation of the Thyroid Gland to Pregnancy, Labor, and the Puerperium in the Endemic Goiter Region of the Canton of Bern** (Das Verhalten der Glandula thyreoidea im endemischen Kropfgebiet des Kantons Bern zu Schwangerschaft, Geburt und Wochenbett). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxv, 264.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The female sex shows a special predisposition to diseases of the thyroid, which is probably caused by influences proceeding from the female genitalia. The preponderance of thyroid disease dates from the age of puberty; almost 7 per cent of the women of the endemic goiter region of Bern trace their goiter to puberty. Nineteen per cent of the women have a swelling of the neck at this period, and in some cases this swelling leads to a permanent goiter.

The chief cause of the preponderance of thyroid disease in women, however, is pregnancy and labor. It is unusual to find a normal thyroid in a pregnant woman in a goiter region. Primiparae generally show a slight swelling of the thyroid, multiparae show parenchymatous, nodular, and vascular goiters. The more pregnancies a woman has had the more tendency she shows to thyroid disease, especially to nodular and cystic degeneration. In 57 per cent of the cases the swelling disappears again during the puerperium. The decrease in size is the greatest in vascular goiters. In 7 per cent of the cases the swelling progresses; delivery may be the starting point of a permanent goiter.

Functional disturbances of the heart are unusual in pregnancy. A healthy heart is not especially affected by thyroid disease, even in pregnancy. Endemic goiter in Bern is the chief etiological factor in contracted pelvis, which is so general. Among the diseases of the thyroid, aplasia and hypoplasia or cretinism cause the extraordinary frequency of this form of pelvis.

RUNGE.

**Kuschtaffoff, N. J.: Spontaneous Recovery in Complete Rupture of the Pregnant Uterus** (Über die Selbstheilung der vollständigen Risse des schwangeren Uterus). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, xxviii, 1743.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A 37-year-old VIIII-para, two weeks before delivery was expected, fell from a wagon, on her back. Fœtal movements stopped soon after the accident. The next day hæmorrhage commenced and lasted four days. After 4 weeks the patient was able to work again and the menses recommenced. Seven months later the patient came with the request that the fœtus be removed as it interfered with her work. On laparotomy the fœtus was found free in the abdominal cavity, adherent to the peritoneum, omentum, and intestine. In the anterior wall of the uterus there was a tear 3 cm. long. The fœtus was freed from adhesions and removed and the rupture in the uterus sutured. Recovery was uneventful. The membranes were adherent to the fœtus. Microscopically there were great changes in the membranes, skin, muscle tissue, and blood-vessels.

From his own and similar cases the author comes to the conclusion: (1) In spite of recovery the capacity for work of women who have fœtuses in the abdomen is decreased. (2) Such fœtuses are always a menace, for the rupture in the uterus leaves an opening through which bacteria of putrefaction may reach it. (3) The kind of microscopical changes in the organs of the encapsulated fœtus depend on the presence of bacteria of putrefaction. (4) Spontaneous recovery does not take place in complete rupture of the uterus.

GINSBURG.

**Schauta, F.: Rachitic Pelvis Simulating Osteomalacia, and Pregnancy** (Pseudo-osteomalacisches [rachitisches] Becken und Gravidität). *Wien. med. Wchnschr.*, 1914, lxiv, 27.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In the pelvis of osteomalacia the pubis is very narrow, in the rachitic pelvis it is very wide, this being the distinguishing feature between the two. The pelvis of pseudo-osteomalacia is very similar to that of osteomalacia but is caused by rickets; the acetabula are pushed forward and the pubic bone is narrow. This form is very unusual in adults, and is only found when the rickets has been of extreme degree. In the author's case there was a two months' pregnancy. The history showed that the patient had not walked until her fourth year, her lungs had been affected since early life and later she was treated for oöphoritis; at that time she was told that normal delivery would be impossible for her. She was 132 cm. in height; the diagonal conjugate 8.7, the true conjugate 5.7 to 6.7. She had a short, plump thigh, with the tibiae very much bowed. Because of the narrow pelvis and the lung disease abortion was indicated. Sterilization should also be considered.

HEIMANN.

## LABOR AND ITS COMPLICATIONS

**Stempel, A.: Extraction with Küstner's Breech Forceps** (Zur Extraktion mit Küstner's Steissshaken). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 487.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author has used Küstner's breech forceps in three cases with good results. The forceps should be applied only to the posterior hip, the anterior hip serving as a fulcrum. The technique varies with the case. If applied only to the posterior hip and the right technique be used this method is a useful and harmless one for both mother and child in cases where the anterior foot cannot be brought down and a purely manual extraction is not possible. It seems destined to reduce the mortality of the infants in breech cases.

SCHIFFMANN.

**Philips, T. B.: Delivery of Two Children from a Double Uterus** (Doppelte Geburt bei Uterus duplex). *Nederl. Tijdschr. v. Geneesk.*, Amst., 1914, No. 9, 631.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The case is that of a 33-year-old primipara whose physician at the beginning of pregnancy had made a



diagnosis of double uterus. A septum could be felt in the vagina and the fundus showed a deep depression in the middle. On the 26th of August there was spontaneous rupture of the membranes with an opening of 3 cm. There was breech presentation; pains in both horns of the uterus, often unequal in degree. On the 27th of August at noon dilatation was complete and a living child 50 cm. long weighing 2220 gm. was extracted. The placenta remained and the left uterus became smaller. On the morning of the 28th on account of hæmorrhage the left placenta was expressed by Crede's method, and the membranes on the right ruptured. On the morning of the 29th there was a slight rise in temperature, 38.5. A living girl was extracted, weighing 2260 gm. and 46 cm. in length. Three hours later the right placenta was removed manually; the left uterus was found to be well contracted and the os closed. The puerperium was normal. The first child had taken the breast before the second was born. On the 18th of November the patient was examined again; the septum was still present in the vagina. Both children were nursing, and each weighed 3700 gm.

STRATZ.

**Zalewski, E.: Duplication of the Female Genitalia and Its Consequences in Delivery** (Doppelmissbildungen der weiblichen Genitalsphäre und ihre Folgen für die Geburt). *Arch. f. Gynäk.*, 1914, cii, 189.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

This paper constitutes a report of 14 deliveries in cases of duplication of the uterus of varying degrees, with and without involvement of the vagina. Complications during delivery were frequent. There was a tendency to abortion and spontaneous premature delivery, abnormal presentations, interference with delivery by the vaginal septum, primary and secondary inertia, retention of placenta and hæmorrhage, which may be caused by the placenta being situated on the septum of the uterus, and hæmorrhage from rupture of the septum in the uterus. An especially interesting case is one of twin pregnancy, a fœtus being contained in each half of the uterus, and the birth of the second child being very much delayed. In another case premature delivery was induced on account of contracted pelvis and the bag inserted for this purpose entered the empty half of the uterus, simulating rupture of the uterus, but no serious complications took place.

HERZOG.

#### PUERPERIUM AND ITS COMPLICATIONS

**Donaldson, A.: A Case of Puerperal Fever Associated with the Enterococcus.** *J. Pathol. & Bacteriol.*, 1914, xvii, 469. By Surg., Gynec. & Obst.

Donaldson reports a case of puerperal fever associated with the enterococcus in a multipara. On the eighth day after parturition the patient complained of pain at the base of the right lung and her temperature rose to 100.4° F. In spite of treatment

the temperature remained with a slight morning remission. Ten days later a catheter specimen of urine was found to contain pus, red blood corpuscles, and bacteria which were found in short chains composed of a somewhat elongated gram-positive coccus, arranged in pairs with an apparent capsule around them. Many were present simply as isolated diplococci. A pure growth was easily obtained on agar and in broth in twenty-four hours. The same organism was isolated from the uterus. It was not found in the blood. A vaccine was made and administered.

Following the second dose of vaccine the temperature fell below normal for the first time in twenty days. It rose again but after the fourth injection and the administration of acetyl salicylic acid it remained subnormal. During the rise the patient developed pain and tenderness in both thighs. She gave a history of previous illnesses in which enteric fever and dysentery seemed to play an important part. The bacteriology of these conditions has not been investigated.

The author then enters into a minute discussion of the bacteriology of the organism found. He reaches the following conclusions:

1. The organism appears to be a harmless saprophyte, which may assume a mild degree of virulence.

2. Its normal habitat is probably the intestine, since the majority of lesions caused by it may be referred to the gut or to its vicinity.

3. Morphologically, there is nothing sufficient to mark it out as a species deserving of special recognition.

4. It is characterized by longevity and by the fact that it will grow fairly well at low temperatures (15° C.).

5. This last fact and its sugar reactions serve to mark it off from the pneumococci, while its growth on solid media and its sugar reactions enable it to be distinguished from streptococcus mucosus and other capsulated streptococci.

6. In its sugar reactions it corresponds most closely with streptococcus faecalis.

7. From a consideration of these facts there seems no justification for a special name—enterococcus—since it appears at most to be merely a variant of the faecalis group.

EDWARD L. CORNELL.

**Allmann: Inversion and Total Prolapse of the Puerperal Uterus** (Inversio et Prolapsus totalis uteri puerperalis). *Deutsche med. Wchnschr.*, 1914, xl, 122.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Two of the author's cases are described. The first was that of a 28-year-old III-para, in whom severe hæmorrhage began shortly after spontaneous delivery. The author saw her an hour after delivery and found her very anæmic. The inverted uterus lay between her thighs, with the placenta in its fundus. This was removed and reinversion easily accomplished. The woman died two hours later.



In the second case the physician had performed Credé's expression for severe hæmorrhage and caused a total inversion. The patient was admitted to the author's hospital two hours later but the uterus could not be replaced. Total extirpation of the uterus by the abdominal route was therefore performed and the patient discharged well after two weeks.

Any sort of traction may cause inversion, and pressure may start it but not complete it. The prognosis is unfavorable. The best treatment is prophylaxis and all unnecessary manipulations of the flaccid uterus are especially to be avoided. Treatment must take into consideration, also, hæmorrhage and shock; but, in general, immediate reposition should be attempted. In complicated inversions the danger of shock is not so great.

Severe hæmorrhage must be treated by the usual methods. Sudden springing back of the uterus must be prevented, and if reposition is not successful or infection is suspected the uterus must be extirpated. In desperate cases when the woman cannot stand anæsthesia the uterus may be constricted with elastic bands to stop hæmorrhage. The strength, especially of the heart, must be supported in every way in order to gain time for reposition. In cases where the heart is affected the expectant treatment is probably justified.

BENTHIN.

**Peterson, L.: A Case of Rupture of the Cervix Post-Partum** (Ein Fall von Ruptura colli uteri post partum). *Finsk. Läk. Handl.*, 1913, lv, 744.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A 22-year-old woman who had always been well gave birth to a foetus in the eighth month of pregnancy after three days' labor. It was delivered through the posterior wall of the cervix. The size of the pelvis was normal; the cervix and external os normal. No process which could have limited the space in the pelvis could be demonstrated. The woman became pregnant repeatedly but the pregnancy ended each time with hæmorrhage and abortion. It is noteworthy that in spite of the direct communication between the inside of the uterus and the vagina a foetus could develop to maturity. If pregnancy should occur again cæsarean section would be indicated.

BJÖRKENHEIM.

#### MISCELLANEOUS

**Green, R. M.: Intracranial Hæmorrhage in the New-Born.** *Boston M. & S. J.*, 1914, clxx, 682.  
By Surg., Gynec. & Obst.

The author reports seven cases of intracranial hæmorrhage in new-born babies, giving the post-mortem findings. In two cases there had been a difficult forceps delivery and in one a low forceps following a tedious labor. Two cases occurred after what seemed easy labors. And there were two cases of hæmorrhagica neonatorium. His conclusions are:

1. Intracranial hæmorrhage may occur in the new-born either from the trauma of operative or

normal labor or in association with hæmorrhagica neonatorium.

2. It often does not present the typical clinical picture of increased intracranial pressure.

3. Its presumptive diagnosis depends on early recognition of refusal to nurse, pallor, and slight facial œdema, which may be confirmed by the appearance of more classic signs.

4. Diagnosis may be positively established, and some therapeutic relief afforded, by lumbar puncture when the hæmorrhage is infratentorial, or by cranial puncture when the hæmorrhage is over the cerebral convexity.

5. If these measures fail to give relief, operative decompression by craniotomy is indicated.

6. The majority of intracranial hæmorrhages in the new-born are subdural, but intraventricular hæmorrhages may also occur.

7. The source of bleeding may be from laceration of the tentorium, of the choroid plexus, of the longitudinal sinus, and of the pial vessels.

8. In cases associated with hæmorrhagic disease preliminary transfusion may be indicated before craniotomy.

9. The gravity of the prognosis demands an enlightened prophylaxis by avoiding all unnecessary occasion for foetal trauma.

C. H. DAVIS.

**Gröné, O.: Epidural Hæmatoma in the Spinal Canal of the New-Born** (Epidurales Hæmatom im Rückenmarkskanal bei Neugeborenen). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1849.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

This is a report of four cases of epidural hæmatoma in the spinal canal without visible injury of the vertebræ or ligaments. The author believes that such cases are more frequent than is generally known, because on autopsy the spinal canal is seldom opened. Especially in small children,—for example, twins,—and prematurely born children he thinks the hæmatomas may be caused by injury to the vessels from torsion of the spinal column during delivery. In the cases described the Wassermann reaction was negative in the mother.

K. HOFFMANN.

**Brattström, E.: A Case of Quadruplets from Four Ova, with a Discussion of Quadruplets in General** (Ein Fall von viereiigen Vierlingen nebst einigen Beobachtungen in bezug auf Vierlingsgeburten im allgemeinen). *Allm. Sv. Läk.*, 1913, x, 1370.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A 32-year-old multipara, herself a twin, gave birth to quadruplets weighing 2400, 3270, 1980, and 2720 gms., respectively. The maternal grandmother and one sister of the patient had borne triplets. All four children were boys and three were born alive. They showed all the signs of maturity and were well nourished. Since the mother's milk was not sufficient it was supplemented by some bottle feedings. On the third day after birth all three showed slight icterus. One of the three died after



five weeks of general debility, the others remained well. The collective weight of the placentas was 1900 gms. Three of them were separated by well marked septa, the other was completely separate. The foetuses had developed from four separate ova. In Sweden from 1751 to 1910, among 16,050,351 births, there were 68 cases of quadruplets.

BJÖRKENHEIM.

**Ballantyne, J. W.: Stillbirths' Registration.** *J. Obst. & Gynec. Brit. Emp.*, 1914, xxv, 132.

By Surg., Gynec. & Obst.

This article is a polemic with respect to birth registration and particularly to the question of stillbirth. While acknowledging that some of his propositions are revolutionary, as far as legal regulations in England are concerned, the author offers the following definitions for incorporation in the rules governing vital statistics:

1. For deadbirth, the complete expulsion from the maternal birth-canals of a child, which during or before birth has lost the characters of antenatal life, especially heart-beat, arterial pulsation, and movement.

2. For livebirth, the complete expulsion from the maternal birth-canals of a child which, while it loses pulsation in the cord, adds to the other characters of antenatal life the signs of postnatal vitality, viz., pulmonary respiration and crying.

3. For stillbirth, the complete expulsion from the maternal birth-canals of a child which, while continuing to exhibit one or more of the signs of antenatal life — heart-beat, arterial pulsation, movement — fails for a time to assume those of postnatal life — pulmonary respiration, crying, etc. — and then either loses even the characters of antenatal life or is successfully resuscitated (transanimated).

4. For abortion or miscarriage, the termination of antenatal life before the end of the sixth lunar month by the expulsion of the uterine contents is suggested. A premature birth is expulsion of the uterine contents after the sixth lunar month but before the full term, and it may be a deadbirth, a livebirth, or a stillbirth.

CAREY CULBERTSON.

**Murray, L.: The Immunological Relationships of Mother, Foetus, and Placenta.** *Med. Press & Circ.*, 1914, xcvi, 435. By Surg., Gynec. & Obst.

The experimental work of recent years has demonstrated that the relationship of mother and foetus is comparable rather to that of host and parasite than to any hormonal interaction. Little is known of the relation of normal to toxic pregnancy, but the pregnant animal shows evidence in its body fluids of an active process whereby it immunizes itself against the ovum or some part of it. A number of workers have treated the toxæmia of pregnancy by injecting quantities of serum from clinically healthy pregnancy, and with a considerable degree of success. But as pregnancy is a "chronic" process, in the serum available for injection there can be no very great amount of protective element.

Although the resemblance between anaphylaxis and eclampsia is purely superficial, the author believes there is an excuse for judging eclampsia to be an anaphylaxis in pregnancy. Experimental work in various laboratories makes it certain that an animal can be sensitized by an injection of placenta from its own species. Placenta seems to be the only tissue which has this property; for example, liver extracts under the same conditions will not do so. This remarkable result makes it plain that there is some factor in the placenta of any species which is alien to the blood of that very species. Sensitization is never developed with purely homologous materials. Placenta must contain some body, known as an antigen, which is capable of producing antibodies in the species; that is the stimulating of the body tissues and fluids to immunize themselves. That sensitization has occurred is readily proved by the anaphylaxis which immediately follows a second and larger injection.

It has been proved that pregnant animals are already sensitized to placenta, as the single larger sized dose will produce anaphylaxis. This is most marked in very early pregnancy.

There is evidence that there is some antigen common to foetus and placenta, as an animal sensitized to foetal serum can be made anaphylactic when placental extract is the second injection. However, the author believes that the antigen in pregnancy is a purely placental one and sensitizes both mother and foetus.

Complement-fixation reactions which demonstrate the presence of an antibody have proved positive with early placenta and in early pregnancy alone, from the sixth to the fourteenth week and possibly associated with the fullest development of trophoblastic activities.

By means of an ingenious and delicate apparatus known as Weichardt's diffusimeter, which measures the rate of diffusion of two liquids placed in juxtaposition, it is possible, particularly in the latter months of pregnancy, to show a distinctive reaction when placental extract plus pregnant-serum is compared with placental extract plus non-pregnant serum. This reaction, according to Weichardt, is mainly a toxin-antitoxin one and is of interest in that it shows an incident differing from the antigen antibody reactions already described.

The author describes briefly the Abderhalden dialytic reaction and states that like other antigen-antibody reactions it is better marked in early pregnancy.

C. H. DAVIS.

**Behne, K.: Can an Early Diagnosis of Pregnancy be Made in Cows with Abderhalden's Dialysis** (Lässt sich mit Abderhalden's Dialysierverfahren bei Kühen die Trächtigkeit frühzeitig erkennen)? *Zentralbl. f. Gynäk.*, 1914, xxxviii, 74.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The Kiel gynecological clinic does not believe that dialysis gives a specific reaction for pregnancy. Kurt recently performed a series of experiments with



cows, 2 of which were pregnant in the first month, 8 in the second, 6 in the third, 4 in the fourth, and 4 in the fifth. Almost all the sera were tested with both the maternal and foetal part of the placenta. A dose of 2.5 ccm. of cow's serum was regarded as the optimum dose.

The results were as follows: With a dose of 1 ccm. of serum all four of the pregnant cows examined reacted negatively. With a dose of 1.5 three cows were tested with both parts of the placenta and gave a questionable reaction. A non-pregnant cow gave the same reaction. Another non-pregnant cow reacted negatively. With a serum dose of 2 ccm. the reaction in 6 pregnant cows was not definitely positive. With a serum dose of 2.5 ccm. among twelve pregnant cows tested half reacted negatively. Of the rest, only three gave a certain, though only weakly positive reaction, two with the maternal and one with the foetal part of the placenta. Of the 9 non-pregnant cows tested with the same dose of serum, the reaction was completely negative in only 5 cases, 3 of them reacted positively. In its present form Abderhalden's dialysis does not give a certain diagnosis of early pregnancy. BENTHIN.

**Wallis, R. L. M.: The Value of Abderhalden's Tests in the Diagnosis of Pregnancy.** *J. Obst. & Gynec. Brit. Emp.*, 1914, xxv, 53.

By Surg., Gynec. & Obst.

This article is rather in the nature of a critical review of work already done. At the same time the author reports his own results based upon tests of the era of 50 pregnant women. In brief his conclusions are:

1. The serum of pregnant women contains a specific ferment capable of digesting placental tissue, and this ferment can be detected from the eighth week of pregnancy until ten days after delivery, both by the optical and by the dialyzation test.

2. That both tests should always be applied to the serum from the same case, and that the accuracy of the results depends entirely upon the most scrupulous care in details of technique.

3. That the tests appear to be of value in diagnosis, more especially in the following conditions: (1) The early diagnosis of pregnancy; (2) the differential diagnosis between fibromyomata and pregnancy; (3) the diagnosis of ectopic gestation; (4) the diagnosis of chorio-epithelioma; and (5) the presence of retained placenta.

4. That there is at present no justification for stating that the serum of pregnant women will digest other than placental tissue.

5. The claims of Abderhalden that the optical and dialyzation tests are of value in the diagnosis of pregnancy are established. CAREY CULBERTSON.

**Fraenkel, C.: Serum Diagnosis of Pregnancy** (Ein Beitrag zur Serodiagnose der Schwangerschaft). *Berl. klin. Wchnschr.*, 1913, I, 2280.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Where pregnancy was known to be present the antiproteolytic power of the mother's serum was

always increased. In clinically doubtful cases this increase was not found in the ones that turned out on further observation not to be pregnant, but it was found in those that were really pregnant. There was only one exception to this, a case of high antitryptic titer without pregnancy. The sera of the non-pregnant cases in most instances showed no increase in the antitryptic titer, but there were a few rare exceptions.

The reaction is almost as marked in carcinomatous sera, less so in patients with disease of the adnexa. Therefore the determination of the antiproteolytic power of the blood may be used in the diagnosis of pregnancy, to the extent that a negative reaction proves the absence of pregnancy, while a positive reaction must be accepted with some reservation, as there are some exceptions. JAEGER.

**Miller, J. W.: Corpus Luteum and Pregnancy; the Youngest Human Ovum Obtained by Operation** (Corpus luteum und Schwangerschaft; das jüngste operativ erhaltene menschliche Ei). *Berl. klin. Wchnschr.*, 1913, I, 865.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Ovulation precedes menstruation by about 9 days, as shown by the experimental work of Fraenkel and Hirschmann-Adler. Therefore the limit for fertilization is about 18 days after the beginning of the last period, or in women who menstruate every three weeks, about 11 days.

Miller proves the epithelial origin of the corpus luteum by demonstrating colloid drops inside the cells, which are produced only by epithelium. The fresh corpus luteum gives no fat reaction; neutral fat can be demonstrated only after the beginning of degeneration, the eighth or ninth week. The corpus albicans arises from the disintegration of the fatty lutein cells by hyaline degeneration of the connective-tissue reticulum.

The corpus luteum of pregnancy is characterized by colloid drops and calcium concretions with negative fat reaction. The corpus luteum is a periodically formed gland with internal secretion which causes increased size and turgor of the organ in the reproductive years, cyclic transformation of the endometrium into decidua, and insertion and development of the ovum, and menstruation if it is not impregnated.

The author describes a case of removal of a cystic corpus luteum by laparotomy in a patient pregnant 7 or 8 weeks; there was degeneration of the product of pregnancy without abortion. It is always the ovum of the first missed period that is impregnated; implantation takes place not at the close of the last period but shortly before the time of the first missed one. The premenstrual change in the uterine mucous membrane is caused by the corpus luteum. As implantation takes place at the end of the first missed period, the hitherto accepted duration of pregnancy must be reduced by about 19 days. The toxicoses of pregnancy, including eclampsia, probably arise from a hypofunction of the corpus luteum and adrenals.



Menstruation is only a kind of periodic unburdening of the hyperæmic uterus, and has no importance in conception. The menstrual blood is probably the nutritive fluid for the ovum, and is discharged after the breaking down of the nest of the ovum. Rutling and menstruation are developmentally and physiologically different phenomena. The implantation results from the active penetration of the ovum between two gland openings. Both components of the trophoblast are of foetal origin. The capillary endothelium and the gland epithelium are purely passive.

MORALLER.

**Von Neugebauer, F.: A New Series of 73 Cases of Twin Pregnancy, with One Ovum Implanted Inside the Uterus and the Other Outside** (Eine neue Serie von 73 Fällen isochroner, heterotoper Zwillings-schwangerschaft, das eine Ei intrauterin, das andere extrauterin implantiert, nebst Schlusserfolgerungen). *Gynäk. Rundschau*, 1913, vii, 809.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author had previously published a monograph on this subject and has since collected 73 cases from the literature, making 243 in all. The conclusions from all the statistics are as follows:

The frequency of such cases increases with progress in diagnosis and operative experience. In the first 170 cases the right diagnosis was made only 7 times before operation, while in the present series of 73 cases it was made 8 times.

The fate of the intra-uterine foetus was not given in 22 cases; in 110 cases there was abortion, 57 of them spontaneous and 53 after surgical operations; 73 of the uterine pregnancies gave 76 mature and living children, there being twins inside the uterus in three cases; 35 of these children were delivered by abdominal incision.

It is hard to tell what became of the extra-uterine foetuses, for in most cases there was no precise information. Among 38 cases the extra-uterine foetus was extracted, mature and living, by abdominal incision 6 times. In not less than 35 cases both foetuses attained maturity. In one case there were mature triplets, two inside the uterus and one outside. The results to the mother are not given in 25 cases. Among the other 218 cases, 53 died.

The mortality is constantly decreasing and will decrease still more when operation is always performed at the right time before the woman has lost too much blood. When extra-uterine pregnancy is known or suspected, operation should be performed at once, regardless of whether there is at the same time an intra-uterine pregnancy or not. JAEGER.

**Routh, A.: The Need for Research in Antenatal Pathology.** *Brit. M. J.*, 1914, i, 902.

By Surg., Gynec. & Obst.

The author states that in the study of antenatal pathology it is necessary to determine how paternal and maternal disease, e. g., syphilis, tuberculosis, general diseases of the mother — such as smallpox, pneumonia, diabetes, toxæmias of pregnancy, etc.,

affect the fertilized ovum in its embryonic and in its foetal stages. Also, the pathologist who would succeed must familiarize himself with post-natal pathology in all its variations.

Research can only prove whether, in cases of maternal albuminuria or eclampsia, the foetal organs participate in the pathological changes found in the mother in these diseases. In such serious and often fatal maternal toxic diseases every effort is concentrated upon the mother, and pathology of the foetus, which is often dead, is liable to be disregarded.

Bacteriology has led to the discovery of the specific germin in many maternal diseases which cause foetal death and, hence, the task has now become much easier. This is especially true in the case of syphilis, since not only the specific cause is known — *spirochæta pallida* — but the means of making a positive diagnosis and giving specific treatment is at hand. Routh believes, as do many others, that the infection of the foetus is usually from the mother. Also that the maternal infection is transplacental. The effect of syphilis in causing abortions or stillbirths is still, scientifically at least, a debatable question. Clinically there is strong evidence to prove that syphilis is a cause of abortion and stillbirths.

Antenatal tuberculosis, according to British authorities, is almost non-existent. Very few children at birth show evidences of clinical tuberculosis and to prove or disprove the presence of antenatal tuberculosis is a problem not yet solved.

To further this spirit of research, Routh suggests that all general and lying-in hospitals be provided with antenatal research laboratories, so that the pathology, along with the clinical observations, of every abortion and stillbirth can be reported upon.

HARVEY B. MATTHEWS.

**Buist, R. C.: Two Cases of Pregnancy in Uterus Subseptus.** *Brit. M. J.*, 1914, i, 907.

By Surg., Gynec. & Obst.

Buist reports two cases of pregnancy in uterus subseptus and refers to one previously described, all having been seen within six months. Just how frequently malformations of the uterus occur it is impossible to say, but the question of their influence on the genital functions is of practical interest.

The chief disturbances in association with pregnancy are:

1. The second cavity has been said to explain cases of menstruation occurring during pregnancy in the other.

2. The formation of decidua in the second cavity may call for its definite expulsion at delivery, and may give an unusual form of hæmorrhage, intra-partum or post-partum.

3. The unequal development of the uterine walls may provide a source of irregular contractions during labor or post-partum, causing delay in delivery or post-partum hæmorrhage respectively.

4. Rupture of the irregularly developed uterus has been recorded frequently, both at the fundus and at the cervix.

HARVEY B. MATTHEWS.



**Jaschke, R. T.: Examination of Kidney Function in Pregnancy** (Untersuchungen über die Funktion der Nieren in der Schwangerschaft). *Ztschr. f. gynäk. Urol.*, 1913, iv, 192.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Formerly the judgment of the kidney condition in pregnancy was based too much on anatomical changes, the function being scarcely considered at all. The anatomical changes cannot explain the wide differences in individual cases. The author carried out functional tests by Von Schlayer's method on 20 normal pregnant women with urine free from albumin and got noteworthy results.

According to Schlayer the excretion of potassium iodide gives information as to the condition of the tubules, that of milk-sugar as to the condition of the vessels. Almost all the cases showed an acceleration in the excretion of potassium iodide of 24-28 hours—normally 0.5 gm. potassium iodide is excreted after 40 hours. The milk-sugar excretion on the contrary was delayed, except in three cases, to as much as double the normal time, which is 1 gm. in 4 to 5 hours.

The hastening of the potassium iodide excretion indicates an increased functional activity of the tubules, which the author regards as a process of adaptation to the pregnant condition. In 4 pathological cases the test showed a delay in the milk-sugar excretion, in one case to 33 hours, and also a delay to almost double the normal time for the potassium iodide excretion. In the puerperium there was an extraordinarily quick return to normal conditions. Perhaps the functional decreased sensitiveness of the blood-vessels in the decrease of the diuresis and the salt quotient plays a great part.

DORN.

**Hendley, P. A.: Pituitrin in Labor.** *Brit. M. J.*, 1914, i, 906.

By Surg., Gynec. & Obst.

Hendley strongly favors the use of pituitrin, when the indications are present, and gives a word of warning against its use in those cases presenting any

obstruction to the presenting pole. It is invaluable in the long-drawn-out first stage of labor, especially where the membranes have ruptured early, causing a "dry labor." It is a powerful remedy in the treatment of shock and collapse and the excitement of a highly nervous woman is calmed in an extraordinary manner.

The author further states that recovery is hastened and patients who have had pituitrin administered always ask for its repetition. Again, he has never had a case of post-partum retention of urine nor a severe post-partum hæmorrhage following its administration. If slight post-partum hæmorrhage supervenes, a further dose will control it.

A simple technique for the routine method of administration of pituitrin is given, following which is a report of 60 cases demonstrating the efficacy and safety of the drug.

HARVEY B. MATTHEWS.

**Herron, D. A.: Pituitary Products in Obstetrics.**

*St. Paul M. J.*, 1914, xvi, 237.

By Surg., Gynec. & Obst.

The author discusses the physiological action of the extracts of the posterior lobe of the pituitary body, reviews briefly some of the literature regarding their use, and makes some deductions from his own experience with these preparations in a series of 31 deliveries.

In his series of cases where pituitrin was not used, the average duration of labor was 10 to 11 hours, as against 12 hours and fifteen minutes when it was employed. Fifteen cases which he had thought would be difficult labors if not operative cases terminated spontaneously after the use of from one to two ccm. injected intramuscularly. He agrees with the generally accepted notion that it should not be given without good dilatation, or in primiparæ with rigid perinæi. He is of the opinion that it is more prompt and more reliable than any other oxytocic, more powerful than any but ergot, and if used only as indicated harmless to both mother and child.

C. D. HOLMES.

# GENITO-URINARY SURGERY

## KIDNEY AND URETER

**Jump, H. D., Beates, Jr., H., and Babcock, W. W.:**  
**Precocious Development of the External**  
**Genitals Due to Hypernephroma of the Adrenal**  
**Cortex.** *Am. J. M. Sc.*, 1914, cxlvii, 568.  
By Surg., Gynec. & Obst.

The authors report a case of the above, briefly summarize the literature on the subject, and suggest a new theory in explanation of the phenomenon.

The subject of the case report, a girl, began to develop rapidly both physically and mentally, when one year old. Hair appeared at this time on the pubes, in the axillæ, and over the legs and trunk in the order named. When she began to talk her voice was pitched much lower than in the normal child and by the time she was seven it was a deep bass. At this time the skin of the face became rough and red from an acne eruption, and she developed a beard. A tumor in the right hypochondrium was then first observed, although search had previously been made for one. The tumor grew rapidly, so that three months after its first appearance the abdomen was greatly distended and dyspnoea was marked. The labia were very large and thick. The clitoris was one inch long, and half an inch in diameter, and notched on the under surface so that it resembled a hypospadiac penis. The patient did not menstruate.

The child died three hours after operation for the removal of the tumor, a hypernephroma of the adrenal cortex. At post-mortem examination the uterus, ovaries, and pituitary body were found normal.

In explanation of the curious overgrowth noted, the authors call attention to the relation between the adrenals and the pituitary body described by Sajous. In regard to treatment they suggest early operation in all cases presenting similar symptoms, as the prognosis without operation, or with late operation, is absolutely bad. S. W. MOORHEAD.

**Saviozzi, V.:** **Study of Perirenal Tumors** (Contribution à l'étude des tumeurs pararénales). *Tumori*, 1913, iii, 207.  
By Journal de Chirurgie.

The author describes a case in a woman of 60, who was very pale, emaciated, and cachectic, and whose abdomen had been increasing in size for a year and a half. An irregular swelling, which could be felt on the right side, was hard and fluctuating in places and extended down to the pelvis and upward to the false ribs, and occupied both flanks, but was more pronounced in the right. A clinical diagnosis of malignant cystic tumor of the right ovary was made.

Operation was performed under high spinal anæsthesia. A median subumbilical incision was made and an enormous, soft, retroperitoneal tumor discovered, which he decided to remove through a lumbar incision. This incision having been made, a tumor twice as large as an adult's head was found. The kidney appeared normal and was situated behind the tumor, to which it was loosely adherent. The tumor was removed without any considerable hæmorrhage and the patient bore the operation well, which speaks favorably for spinal anæsthesia.

The tumor was made up of two parts, a large multilobular one, seemingly made up of adipose tissue, and a smaller one apparently fibrous. It weighed 5.40 kg. and was 50 cm. in circumference. On section, various kinds of tissue were found—fatty, fibrous, fleshy and muscular. Microscopic examination showed it to be an angiosarcomatous fibrolipoma.

The author reviews the cases previously published and comes to the following conclusions: This form of tumor is found especially in women from 35 to 60. Sometimes they develop in the perirenal cellular tissue; sometimes, as in this case, they are encapsulated and are easily removed; sometimes they develop in the fibrous capsule and then they are very adherent, so that nephrectomy becomes necessary. They may attain a large size, weighing from 5 to 30 kilogrammes. Saviozzi thinks that this case confirms the assumptions of Albarran, Birch, and Hirschfeld that these tumors are derived from the wolffian body. Diagnosis is very difficult. They may be confused with tumors of the kidney, spleen, and ovary. The prognosis is relatively benign, of recent years, owing to the progress in surgical technique. He reports 69 operations with 30 per cent mortality. CH. VILLANDRE.

**Bloch, O. E.:** **Kidney Injuries.** *Urol. & Cutan. Rev.*, 1914, xviii, 169.  
By Surg., Gynec. & Obst.

In order to disprove shock as the most prominent symptom in kidney injuries, the author cites a case of a young man, aged 17, who received an injury which was accompanied shortly thereafter by hæmaturia. Forty-eight hours later, owing to a rapid, weak pulse and great pain, an incision was made over the left kidney, which revealed a laceration of the convexity of the kidney about two-thirds of its length.

The second case was that of a man forty-five years of age who, following the pushing open of a door, suffered severe pain in the upper left abdomen. There was no hæmaturia; urinalysis normal. Several days later a swelling developed in the left iliac region which extended to the crest of the ilium and



was palpable. Three days later cedema appeared on the left thigh over this area. An incision showed this area was filled with blood.

The third case was that of a man who had been kicked by a horse in the upper left abdomen.

In all three cases the cavities were packed with gauze. Bloch believes that on account of penetrating wounds of the kidney being so often associated with trauma to the viscera, intraperitoneal operations should be performed.

H. A. KRAUS.

**Arcelin: One Hundred and Two Radiographic Examinations for Lithiasis of the Kidney and Ureter, Verified in Various Ways** (Statistique de 102 examens radiographiques pour lithiase urétéro-rénale suivie de vérifications diverses). *Lyon méd.*, 1914, 472. By *Journal de Chirurgie*.

Since 1906 Arcelin has made 102 examinations for calculus which were verified by operation, spontaneous expulsion of the calculus, or autopsy; he did not count the numerous cases not operated on or not followed up.

As a result of these examinations 92 operations were performed, 2 patients having had a double operation; there were 7 cases of spontaneous expulsion, one of expulsion after catheterization, and 4 autopsies. In the 102 examinations there were two errors of interpretation: 1 faecal calculus and 1 biliary calculus having been taken for calculi of the kidney. In 2 cases the radiographic diagnosis was not confirmed on operation; in one case nephrotomy was performed and an attempt was made in vain to find a shadow at the level of the fourth lumbar vertebra; in another case several shadows of calculi in the right kidney were not found on nephrotomy, but were found at autopsy.

To avoid such occurrences as noted above an attempt should be made to localize the calculus by means of a ureteral sound. This would show that some shadows located along the urinary tract are not due to calculi. There are also some calculi invisible to radiography in the living subject. One calculus weighing 3.20 gr. was not seen because of lack of mobilization of the kidney while the picture was taken. It was composed of phosphate and calcium oxalate and would have been visible with a better technique. One calculus of pure uric acid, weighing 0.47 gr., could not be seen in the living subject but was found on autopsy in the pelvis, and 4 pure uric acid calculi of the pelvic ureter remained invisible in the living subject.

Thus there were 2 per cent of errors of interpretation, 2 per cent of calculi indicated by radiography but not found on operation, and 6 per cent of calculi not visible by radiography but found afterwards.

R. LERICHE.

**Krotoszyner, M.: Early Diagnosis of Renal Tuberculosis.** *Calif. St. J. Med.*, 1914, xii, 195.

By Surg., Gynec. & Obst.

Krotoszyner outlines the methods of making an early diagnosis of renal tuberculosis, for he claims

that in limiting the disease to its original focus, or to one kidney, lies the only hope for a cure by less radical and mutilating means.

The failure of recognition lies in the fact that the general practitioner is not on the outlook for it. Suspicious symptoms are pollakiuria, insidious, without palpable cause as gonorrhoea, traumatism, instrumental infection, etc., which is running along with or without dysuria, and a cloudy microscopically purulent urine, which has become chronic. Characteristic symptoms are also a slightly red discoloration of the urine or a definite terminal hæmaturia. Satisfactory conclusions, as regards localization of the focus, may be made by a history of distinct attacks of kidney colic or pains located at one of the renal regions, at either of the lateral abdominal regions, near the crest of the ileum, the hip, or the os sacrum. Occasionally a sensation of chilliness in one lumbar region is complained of; also distinct unilateral sensations of pain in one-half of the bladder, urethra, or vagina, or in one labium, which are either connected with or noticeably independent of micturition; at times, a sudden and intense bladder tenesmus with evacuation of a few drops of a clear, watery urine, with chills and consequent sweating.

Palpable enlargement of the kidney should be accepted with caution. In some cases there are present pressure-points in the course of the ureter; this symptom is rarely missing in women.

LOUIS GROSS.

**Pardhy, K. M.: Nephroptosis: Movable Kidney, Floating Kidney, Dropped Kidney.** *Practitioner*, Lond., 1914, xcii, 527.

By Surg., Gynec. & Obst.

The author makes a report of operations for movable kidney on patients with mental disorders. He has performed nephropexy on 415 patients, in 396 of which he anchored the kidney on both sides. In all he has anchored 811 kidneys. He says the majority of patients suffered more or less from neurasthenia mainly or in addition to digestive, genito-urinary, and local symptoms, such as severe headache, tachycardia, asthma, hemicrania, etc. The author, however, proposes to deal mostly with patients suffering from mental disorders, such as melancholia, with or without delusions, insanity, and mania. He has performed nephropexy on 25 patients of this type. His interest was aroused by Suckling's observations along this line.

The author then takes up the pathology, and attempts to establish the fact that the nervous disorders are due to toxæmia caused by the obstruction to the flow of urine through the ureter. He says this toxæmia may be caused in the following ways:

1. Deficient excretion, therefore retention, of some of the waste products of metabolism in the blood stream.

2. Interference with the formation of the internal secretion of the kidney.

3. Possible formation of a perverted internal secretion.



4. As a result of the obstruction of the ureter when it is kinked, stasis of the urine, and back pressure in the pelvis of the ureter, calyces, and urinary tubules are produced. This is evident, as previously stated, from the varying degree of hydronephrosis, flattening of the pyramids, and cystic degeneration met with. Probably this stagnant urine will undergo decomposition, and some of the products of decomposition will be absorbed into the general circulation.

According to this condition, he justifies the recovery of 19 out of his 25 patients of mental disorders. He emphasizes the great care that should be taken of these patients after operation, that they should be under the watchful care of a nurse or should be detained in an asylum for mentally diseased patients. Out of his 25 cases, 19 were females and 6 males.

The time required for these patients to obtain a complete cure after nephropexy varies from a few months to a year or more, and it is very essential, the author states, that these patients be properly cared for during that time, and their physical and mental welfare carefully looked after, as outlined by the usual treatment of mental cases.

The author attempts to refute the idea that nephropexy has little or nothing to do with the recovery of these patients, although it requires such a long time for them to recover after the operation.

The author emphasizes the proposition that kidneys should be fixed in as nearly the normal position as possible and he prefers the Billington method of operation. He regards a large number of cases of neurasthenia as caused by movable kidneys and believes that nephropexy properly and efficiently performed prevents auto-intoxication and the consequent train of nervous symptoms. He uses the Brödel sutures and the curvilinear incision of Billington, extending from the end of the twelfth rib to the edge of the quadratus lumborum and continuing parallel to the ureter. A. C. STOKES.

**Nuzum, F.: Retro-Aortic Left Renal Veins.** *J. Am. M. Ass.*, 1914, lxii, 1238. By Surg., Gynec. & Obst.

Nuzum in a detailed examination of the literature found but 16 citations of the left renal vein lying behind the aorta. To this number he adds 10 from the pathological laboratory of Rush Medical College. The types described vary markedly and were found to drain both normally formed and placed, as well as anomalously formed and placed kidneys. The author suggests a probable relationship between the presence of retro-aortic renal veins and the condition known as hypostatic albuminuria, in which albumin is detected only while the patient is in a recumbent position or shortly thereafter.

J. S. EISENSTAEDT.

**Billington, W.: The Results of Nephropexy.** *Brit. M. J.*, 1914, i, 856. By Surg., Gynec. & Obst.

The author reports having performed nephropexy on over 500 patients in the last nine years, in many

cases both kidneys having been operated on. He judges the results of the operation from two standpoints, mechanical and therapeutic. To be mechanically successful the operation should result in the permanence of the kidney in the position in which it has been fixed and the absence of unpleasant sequelæ such as pain, sinus, and hernia in the scar. Therapeutically successful cases naturally are those in which the operation is followed by the disappearance of the presenting symptoms.

A review of Billington's cases shows that a very large per cent have been successful, mechanically as well as therapeutically. In a recent investigation of 100 consecutive cases, where the operation had been of more than one year's standing, 60 per cent were cured or greatly benefited, 30 per cent were better, and 10 per cent were unimproved. In this series, 7 were males and 93 were females. Of the women, 37 were married and 56 were unmarried. In 57 cases both kidneys were operated on at the same time, in 32 cases the right kidney only, and in 11, the left. The average age of the patients was 34, and the average duration of symptoms was 5 years. H. L. SANFORD.

**Caulk, J. R.: Incrustations of the Renal Pelvis and Ureter.** *Surg., Gynec. & Obst.*, 1914, xviii, 497. By Surg., Gynec. & Obst.

In the beginning of the article stone formation and calcareous deposits in the genito-urinary tract are briefly considered. It is noted that most of the writers on this subject are in accord in the belief that necrosis is the most important feature in such productions, but the manner in which deposits are laid down in areas of necrosis is still an open question. In the paper four cases of incrustations are reported; the first occurred around the renal papilla, with a retention cyst of the kidney as a consequence; the second case occurred on the posterior wall of the renal pelvis; the third in the upper ureter, and the fourth in the juxtavesical ureter; in other words, such formations may occur in any part of the tract. The deposits in all four cases were evidently calcium salts. The two pelvic cases showed inflammatory changes as an etiological factor; in the ureteral cases, not coming to operation, the pathological lesion could not be determined. There was nothing of importance in the symptomatology, except in case three. In this case the pain was paroxysmal, acute, and entirely epigastric.

The chief feature of the author's paper is the diagnostic complex, which should enable one to differentiate an incrustation along the ureter from a calculus as well as a sandy impaction. The following are the four cardinal points:

(a) Faint X-ray shadow; (b) the passage of the egg-shell-like material following the manipulation with the ureter catheter; (c) the passage of the catheter through the obstruction and relieving the patient of symptoms, the X-ray shadow still persisting; and (d) finally, the gradual disappearance of the shadow by use of the ureter catheter.



Treatment in such cases depends on their location. Those around the papillæ or within the renal pelvis should be removed by nephrotomy. The author believes that pyelotomy will not provide sufficient exposure to insure the complete removal of all the calcareous material. Incrustation along the ureter should be removed by means of the ureter catheter, if possible. Open operations are liable to lead to secondary stricture, necessitating later nephrectomy.

**Sweet, J. E. and Stewart, L. F.: The Ascending Infection of the Kidney.** *Surg., Gynec. & Obst.*, 1914, xviii, 460. By Surg., Gynec. & Obst.

The authors present a review of the literature of the lymphatic apparatus of the kidney, ureter, and bladder, which shows that there exists an extensive lymph system which freely anastomoses, so that the bladder is in direct lymphatic connection with the kidney through the lymph-channels of the ureter. They conclude that infection travels through these channels and not through the blood-vessels, since the veins of the bladder and ureter for the greater part open into the general venous system, not into the venous system of the kidney; that infection proceeds upward through these lymphatics and not through the lumen of the ureter is further shown by experimental evidence. If the lumen of the ureter be open to infection the infectious process is traceable in the lymphatic system, not along the mucosa of the ureter. If the lumen be closed to infection, the process extends to the kidney in the usual way. If the lumen be open to infection but the lymphatics not in contact with virulent infection, as when the ureter is passed through the pancreatic duct, there is no ascending infection. If the lumen be open but the continuity of the lymphatics be interrupted, infection does not ascend. Finally, if the kidney pelvis be directly connected with the gut the general infection characteristic of an ascending infection of the kidney does not occur.

The practical surgeon must bear this lymphatic system in mind in dealing with any infectious process in the pelvis or lower abdomen and in the presence of a kidney involvement must look for a possible primary source outside the kidney. The suggestion is offered that ulcerations accompanying a cystitis should be locally treated.

**Von Hofman, E.: Dangers of Pyelography** (Sur les dangers de la pyélographie). *Folia urol.*, 1914, viii, 393. By Journal de Chirurgie.

Pyelography is a method of kidney examination which consists in injecting a 10 per cent solution of collargol or some other substance opaque to the X-rays through a ureteral sound so as to fill the pelvis and the calyces; a radiograph is then taken and an image of the excretory passages obtained. Thus renal retention or anomalies of position which could only be suspected clinically can be demonstrated. But the method is not without danger. Von Hofman describes the two following cases:

Pyelography was performed on a young girl of 15 with a left hydronephrosis. Four days later she died of peritonitis. Autopsy showed that the pocket of hydronephrosis filled with collargol had ruptured. As the kidney was adherent to the descending colon, rupture took place into the posterior cavity of the omentum. From there through Winslow's foramen the collargol was distributed into the peritoneal cavity. On histological examination collargol was found in the uriniferous tubules and also at certain points in the glomeruli. Through the ruptured uriniferous tubules the collargol had passed into the neighboring tissue where it had produced necrosis.

In a second case of pyonephrosis, pyelography was performed three days before operation. The collargol had penetrated the interstitial tissue, though the fissure through which it had passed could not be found. Here, too, the collargol had produced foci of necrosis. Therefore, pyelography by Voelcker and Lichtenberg's method is not without danger. As in all methods of examination, the technique should be found which will give the maximum of benefit and a minimum of risk. The author believes that Legueu and Papin's instrumentation and technique will aid in avoiding such accidents as those described.

E. JEANBRAU.

**Barringer, B. S.: Ureterocele and Ureteral Stone.** *Tr. Am. Ass. G. U. Surgeons*, Stockbridge, 1914, May. By Surg., Gynec. & Obst.

The author believes that kidney or ureteral stone is at times secondary to ureterocele and cites a case in which there were bilateral ureteroceles, in one of which a stone was caught. By means of the operative cystoscope the margin of the ureteral orifice was removed and the stone passed into the bladder and thence out. This simple operation cures the ureterocele and removes the stone at the same time.

**Whitehead, G.: Extraperitoneal Ureterolithotomy through a Median Suprapubic Incision.** *Lancet*, Lond., 1914, clxxxvi, 1182.

By Surg., Gynec. & Obst.

A youth of 20 was admitted to the hospital for radical cure of right inguinal hernia. He had had an external urethrotomy at 7 years of age for removal of an impacted stone in the urethra, at 11 a suprapubic cystotomy for vesical calculus, and a second time for vesical calculus at 15, and at 16 radical cure of left inguinal hernia.

Ten days after the operation for radical cure of right inguinal hernia he was seized with a sudden attack of pain in the left groin. X-ray examination showed a calculus, the size of a sparrow's egg, impacted in the lower end of the left ureter. A median suprapubic incision was made under spinal anesthesia. The calculus could be palpated, with a finger in the bladder near the left ureteric orifice, but the procedure pushed it upward in the ureter. By free retraction of the left rectus muscle and extraperitoneal dissection, the left ureter was ex-



posed at the pelvic brim. A sling of stout silk was passed around it and held while with a finger in the bladder the stone was pushed upward against the silk sling, and a second loop of silk was passed around the ureter below it.

The stone was removed through a longitudinal incision and the opening closed with fine catgut. The bladder was sutured and the suprapubic wound closed with a slender tube put down to the incision in the ureter. A soft rubber catheter was tied in for 48 hours when both the catheter and drainage tube were removed. Recovery was uneventful, the wound healing by first intention.

The bladder was opened by a median suprapubic incision because it was suspected that the stone would be found encysted close to the ureteric orifice and would be easily removed by the transvesical route. The excellent access to the pelvic ureter by extraperitoneal dissection through the same incision suggests that in similar cases the median incision might be used and the stone removed from the ureter after pushing it back to the pelvic brim without opening the bladder.

H. G. HAMER.

#### BLADDER, URETHRA, AND PENIS

**Coudray, J.: Primary Lithiasis of the Bladder in Children and Adults up to 40 among the Mussulmans of North Africa** (Contribution à l'étude de la lithiase vésicale primitive de l'enfant et de l'adulte jusque 40 ans chez les musulmans de l'Afrique du Nord). *J. d'urolog.*, 1914, v, 171.

By Journal de Chirurgie.

In 10 years Coudray had 198 cases of calculus of the bladder among the Mussulmans, 40 of which were in adults from 15 to 40, and 50 in children under 15. During the same time he had only one case of kidney calculus. He believes that the nature of their diet, which is largely vegetable and lacking in nitrogen, and the water, which contains calcium and magnesium, are important factors in pathogenesis. Incontinence of urine was unusual; in several cases there was also prolapse of the rectum. Because of the late stage at which the patients came for treatment and the frequency of renal infection, cystostomy, which places the bladder at rest and allows it to be drained and disinfected, was indicated in preference to lithotripsy.

J. TANTON.

**Edmunds, A.: Ectopia of the Bladder.** *Practitioner*, Lond., 1914, xcii, 501. By Surg., Gynec. & Obst.

Ectopia of the bladder is a deformity which, according to Neudörfer, occurs once in 50,000 births in the proportion of eight boys to one girl. Smeed, the resident medical officer at Queen Charlotte's Hospital, reports only 3 cases out of 28,000 births for a period of seven years in that institution. The author gives the details of a case which came under his personal supervision.

The patient was a girl aged 12, who had been sent home from South America in the hope that something could be done for her in England. Her condi-

tion was extremely miserable. The mucous membrane of the bladder was completely exposed projecting forwards as a deep red ovoid swelling, but was in fairly good condition; that is, there were no ulcers or incrustations upon it. The skin around was cicatricial and covered with scales of hardened mucopurulent discharge; at the lower part of the bladder, the two ureters could be seen partly covered up by swollen mucous membrane. The urine escaped naturally through both of them.

There was a fullness in each groin which ended towards the middle line in a rounded eminence bearing a few scattered hairs, the two together forming a sort of vulva. On separating these, two curved fleshy prominences were seen, representing the nymphæ and the split clitoris, and between these was a small triangular area of mucous membrane. This bore several transverse ridges, and was smooth, lighter in color, and healthier looking than the bladder, differing very little from the normal vaginal wall, of which it was probably the representative. There was no indication of a cervix. The anus was normal. On either side, just beneath the two hairy patches, could be felt the pointed ends of the divided symphysis. The child walked badly, less perhaps on account of her split pelvis than of the exposed bladder wall and the tenderness of the skin around, even contact with her clothes causing her pain. Her general condition was poor, and the benefits of the operation as regards her general health were astonishing. There was nothing in the appearance of the rest of her body or in her general mental condition to suggest any sexual abnormality; beyond the physical deformity, she was a normal child of twelve.

She was kept in bed for a week after admission, in order to get her accustomed to her surroundings, and also to allow the parts to be cleansed. Under a general anæsthetic, the area around the bladder was disinfected, and a fine catheter passed into each ureter so as to define its course and enable it to be felt through the surrounding tissues during the later stages of the operation. An incision was then made through the mucocutaneous margin around the upper part of the bladder. The bladder wall was then carefully dissected up from the peritoneum, a procedure which in this particular case presented no difficulty, although in some cases it has been found to be difficult.

If, however, it is proposed to do a transperitoneal operation, a buttonhole in the peritoneum is not a matter of any vital importance, although it is a distinct advantage to retain it intact. If this can be done, the peritoneum forms a flap, which can be utilized for the purpose of shutting off a general peritoneal cavity, without producing an unnecessary amount of adhesions between the coils of the small intestine. When about half the bladder had been dissected up, the peritoneum was deliberately opened, and the intestines carefully packed out of the way; the finger of the left hand was then introduced into the wound beneath the bladder wall, care being



taken not to injure the ureter, the position of which was rendered apparent by the catheter. The incision, which had been commenced above, was then continued around the whole periphery of the bladder, until this had been completely detached—no cutting being done until it was perfectly certain that the ureter was well out of the way. It should be noticed that, in these cases, the relationship of the parts differs from the normal; the ureteric opening is, to all intents and purposes, on the anterior abdominal wall, and hence the ureters are much more superficial than usual. In this case, they lay along the brim of the true pelvis as far forward as the free anterior ends of the bone.

When the bladder had been detached all around, a certain amount of the wall was clipped away, until a thick broad fusiform area was left attached to the pelvis by a broad stalk of tissue containing the ureters. This was separated from the pelvic wall, just sufficiently to allow of its being turned over, so that the mucous membrane looked towards the sacrum. This part of the operation must be carefully done, its object being to detach the contents of the pelvis from the pelvic wall as little as possible. It is certainly possible to retain the vascularity of the stump of the bladder and therefore probable that, provided sufficient care is taken, the nervous connections may be retained to a certain degree also. A great amount of separation is not required. It is not so much a question of carrying back the bladder to the bowel, as of bringing a mobile portion of the bowel forward to the bladder. It is just this point in which the transperitoneal method has its great advantage, allowing the surgeon to employ the mobile, peritoneum-covered, pelvic colon rather than the more fixed retroperitoneal rectum.

In the present case, the part of the bladder which was anastomosed was uncovered by peritoneum, except for a small area about half an inch square. Here the peritoneum was retained in position, but proved of no particular service in the anastomosis. At this stage of the operation the ureteral stalk was separated into two, so that the wall of the colon could be stitched over the implanted area of the bladder between the two ureters; but this proved impracticable and unnecessary, and therefore might better have been omitted. The next stage was to perform the anastomosis proper. This was carried out on the lines of a gastro-enterostomy. The pelvic colon was brought out and clamped so as to lie transversely across the wound, packing being arranged around it to catch any contents that might escape. An incision was then made through the muscular coat of the bowel, exposing, but not cutting through, the mucous membrane. The lower edge of this incision was then carefully stitched to the muscular part of the stump of the bladder. When this row of sutures was complete, the bowel was opened, the catheters were removed, and the mucous membrane of the bladder sewn to that of the colon; the anastomosis was then completed by suture of the bladder wall to the upper margin of

the incision through the colon. The peritoneal flap, which was produced by the detachment of the upper (umbilical) segment of the bladder, was then tucked back over the small intestine and behind the anastomosis, and a drainage tube was inserted down to the bottom of Douglas's pouch. Two stout silk-worm-gut sutures were then passed through the fibrous margins of the opening in the abdominal wall and left loose. The wound was then packed with cyanide gauze.

The patient bore the operation well, and, although she was far from robust, at no time during the course of the case was there any cause for anxiety. There was no leakage from the anastomosis, and the tube in Douglas's pouch was removed a few days later and left out. The wound from its nature could not be considered aseptic, but such free drainage had been provided that there were no constitutional symptoms of sepsis. The temperature for the first fortnight never rose above  $99.4^{\circ}$ , and there was no sloughing of the wound, which granulated well but slowly. The anastomosis did not leak in the least, and receded into the depths of the wound, leaving a cavity which ultimately filled up. Six days after the operation when the risk of septic complications seemed to be past, gas was administered and the two loose stitches were tied, thus reducing the size of the wound very considerably.

The subsequent progress of the wound was uneventful, and the patient was able to leave the hospital seven weeks after the operation with one or two areas about 1 mm. square still unhealed. It was unfortunate that she could not be detained for further observation, but the nature of her parents' employment necessitated their return to South America, and her general condition was so good that it was not considered justifiable to insist upon her staying in London. Her health and comfort improved from the day of the operation, although she still showed an instinctive terror of being touched, and it was some time before she could forget the soreness and tenderness. The small area of mucous membrane representing the vagina remained sensitive, although not tender, and the author thinks it would have been better to have removed it entirely, since at the operation no uterus seemed to be present. Control was perfect from the first, a mixture of fæces and urine passing every three or four hours.

At first she was disturbed through the night, but she soon accommodated herself to her new conditions and remained comfortable nearly every night. She had a slight attack of pyrexia a month after the operation but nothing was found in the urine to account for it, although this examination was of course complicated by the presence of fæces. Towards the end of her stay in the hospital she also had some slight irregularity in temperature, but this was accompanied by no symptoms which indicated it was due to anything more than a cold.

As these cases are very rare, Edmunds offers the following suggestions:



1. That plastic operations designed merely to reconstruct the bladder are unsatisfactory, since at the very best they only afford partial relief, and that transplantation of the ureters is preferable.

2. That transplantation of the base of the bladder is better than the separate transplantation of the ureters because it is easier to perform, and on theoretical grounds is less likely to lead to an ascending infection.

3. That this is done better by an intraperitoneal than by an extraperitoneal route, inasmuch as it is possible to perform the operation with less interference with the vascular supply of the bladder stump, and to utilize a mobile portion of the bowel.

4. That inasmuch as most of these cases die of pelvic cellulitis, the wound should be left freely open. A hernia may be developed, but this can be dealt with later by an aseptic operation, or may be controlled efficiently with an apparatus.

H. A. MOORE.

**David, V. C.: A Bacteriological Study of Fifty Cases of Non-Tuberculous Diseases of the Bladder and Kidney.** *Surg., Gynec. & Obst.*, 1914, xviii, 432.  
By Surg., Gynec. & Obst.

The cases studied include 27 cases of chronic cystitis, 2 of pyonephrosis, 10 urinary calculi, and 2 vesical tumors. Colon bacilli and allied organisms were present in 60 per cent of the cases but in pure culture in only 30 per cent. Staphylococci were present in 35 per cent of the cases and no two strains were identical in cultural characteristics. One case presented the unusual combination of pseudodiphtheria bacillus, streptococcus, and pneumococcus. Anaerobic cultures were made in all cases and 14 anaerobes were isolated in ten cases, 4 times in pure culture and twice as the prevailing organism.

An anaerobic black pigmented gram-negative bacillus was isolated in 4 cases. It grew only on blood media and in most respects corresponded to the schwartzen farbstoffbildender bacillus described by Heyde, which he isolated from the appendix.

Anaerobic gram-negative influenza-like bacilli were isolated in 4 cases, twice in pure culture. These bacilli grew only on blood media with a scarcely visible growth, and were non-hæmolytic. Injected into the renal pelvis of rabbits they caused death in 24 hours but no macroscopic evidence of pyelitis or cystitis was present.

Other anaerobes were isolated as follows: Staphylococcus parvulus, a hitherto undescribed gram-negative coccus, bacillus funduliformis, and gram-positive staphylococcus.

**Heitz-Boyer, M.: Endoscopic Treatment of Tuberculosis of the Bladder by High-Frequency Currents** (Traitement endoscopique de la tuberculose vésicale par les courants de haute fréquence). *J. d'urolog.*, 1914, v, 155. By Journal de Chirurgie.

The author has previously described the use of the high-frequency current in the form of spark

discharges for the treatment of tumors of the bladder, and is now applying it to the treatment of tubercular lesions of the bladder, particularly to tubercular ulcerations persisting after nephrectomy. In cases where the tubercular ulceration has already thinned the bladder wall and perforation is to be feared, the spark discharge is superior to scarification by electrocoagulation. It is applied to the ulceration and an area of at least 1 cm. around it.

The operation may be very painful and necessitate local or even general anæsthesia. There is a violent reaction in the area treated, with the production of an exuberant dirty white membrane, which recalls the appearance of certain gangrenous villous tumors in process of elimination. This membrane is discharged little by little at the same time that a new epithelium is forming to cover the denuded surface. Complete cicatrization requires four weeks on an average; the urine clears up and gradually the pain disappears. The same treatment may be applied to persistent granulations with or without abscess formation.

J. TANTON.

**Hyman, A.: The Normal Bladder and Its Sphincters and the Changes following Suprapubic Prostatectomy.** *Ann. Surg., Phila.*, 1914, lix, 544.  
By Surg., Gynec. & Obst.

Incontinence of urine following prostatectomy is encountered infrequently, very rarely after suprapubic enucleation, but is more often met with after the perineal operation. The cause of this condition has not been definitely determined. The object of this study is to inquire into the mechanism of urination following suprapubic prostatectomy and to note the changes in the topography of the bladder resulting from this operation. Although individual opinions vary, it appears to the author that Leedham and Greene present the best summary of the standard anatomists. They describe three constrictor muscles, the smooth muscle, involuntary internal vesical sphincter, and the striated voluntary compressor urethræ, but it is well recognized that but two of these muscles are of importance in the act of micturition.

The contour of the normal bladder has long been the subject of much discussion. In 1905 a new method of studying the form of the bladder was devised by Völcker and Lichtenberg. They employed collargol injections combined with radiography, and as a result of their work concluded that the normal bladder when distended is invariably broader above than below, and is never round. Subsequently Leedham and Greene, using the same technique, reported that the radiographs obtained showed the bladder to be oval in shape. The method of Völcker and Lichtenberg — collargol injections combined with radiography — offered the best physiological method of studying this much discussed question, and conclusions reached by its application appear to Hyman to definitely solve this problem. It seems that the observations of the author on the normal bladder are in the main



in accordance with the work of Völcker and Lichtenberg. He began his radiographic studies two years ago. In the beginning three different positions were tried: the ventrodorsal—patient lying flat on back, the dorsoventral—patient on abdomen, and the lateral. The lateral views were very unsatisfactory owing to the density of the muscular and bony structures of the pelvis. The dorsoventral and ventrodorsal gave practically the same results, and the latter, the ventrodorsal position, because more convenient, was adopted as a routine. The position of the X-ray tube is of considerable importance. The earlier radiographs were taken with the tube placed posterior and obliquely to a vertical plane passing through the symphysis pubis. It was found, however, that this position failed to give a good view of the outlet of the bladder. Subsequently, therefore, the tube was placed so that its focus was at a right angle to the plate, the rays striking the body just above the symphysis. A compression blend was used, moderate compression being applied, however, so as not to disturb the bladder. The medium used was a 5 per cent solution of collargol which in the large majority of cases was found to be non-irritating. The solution was introduced through a catheter which was then withdrawn.

Twelve radiographic exposures of normal bladders were made and as the main object was the study of the sphincter region, the bladders were fully distended.

The shape of the normal bladder was found to be variable, although the type most frequently encountered was that showing a broad upper portion, narrowing down toward the outlet. In the radiographs the urethra was invariably found to be sharply demarcated from the bladder, thus demonstrating that the internal vesical sphincter is the muscle that retains fluid in the distended bladder. The position of the internal sphincter was either on a level with the upper border of the symphysis pubis, or midway between the upper and lower borders.

The following conclusions are drawn by the author:

1. The internal vesical sphincter is the true sphincter of the normal bladder, and of the bladder in prostatic enlargement.

2. The external vesical sphincter, "compressor urethræ," is the functioning sphincter after suprapubic prostatectomy in the large majority of cases.

H. A. MOORE.

**Packard, H.: Eversion of Bladder.** *Ann. Surg.*, Phila., 1914, lix, 555. By Surg., Gynec. & Obst.

The author reports the case of a young woman, 21 years old, who was the subject of a criminal assault when four years old, and who suffered at that time extensive pelvic lacerations. When she presented herself to the author she had complete prolapse of the uterus and eversion of the bladder. An X-ray photograph showed an entire absence of the pubic arch. That this was not congenital was

proved by the fact the patient was normal as a child before the assault. The entire bladder wall was dissected out and the ureters implanted into the vagina, and then through an abdominal incision fixation of the uterus was effected by entangling the fundus with the recti muscles. This was followed by a good recovery and relief of the many distressing symptoms, with the exception of urinary incontinence.

H. SANFORD.

**Bangs, L. B.: Cicatrix of Bladder Relieved by Fulguration.** *Med. Rec.*, 1914, lxxv, 619.

By Surg., Gynec. & Obst.

The author reported an interesting case of obstruction, following suprapubic prostatectomy, which was relieved by fulguration. About eight months following operation the case was referred for examination. The patient voided turbid urine in a dripping manner. Five ounces of purulent residual urine were obtained. Cystoscopy revealed a transverse cicatricial band with bulging lateral folds, just within the internal orifice. As operation was refused, fulguration was advised. Four applications were made, forming a groove through the middle of the band and reducing the residual urine to six drams. Relief was felt after the second application.

C. D. PICKRELL.

**O'Neil, R. F.: A Case of Incrusted Cystitis Showing End-Result.** *Tr. Am. Ass. G. U. Surgeons*, Stockbridge, 1914, May. By Surg., Gynec. & Obst.

The patient was a woman of 29 who entered the hospital in 1896 for the relief of hæmaturia, vesical tenesmus, and urinary pain and frequency of six months' duration. The trouble began about a month after delivery. She had passed clots with gravel.

Examination of the bladder under ether showed a large sloughing area on the trigone and other smaller ones. Calcareous patches could be felt with the finger. The areas were curetted. Considerable improvement followed the operation.

She was next seen in 1914, eighteen years after operation, when she came to the hospital for abdominal symptoms, this attack having no connection with her genito-urinary tract. A cystoscopy was made at that time, however, the note being as follows: "Bladder shows evidence of inflammatory process in the past. Mucosa thickened in places. The mucous membrane on the whole is paler than normal. Ureteric orifices normally placed and normal in appearance. Catheters passed easily to each kidney. Normal looking urine appeared from each side. The examination of the sediment showed no pus from either kidney and no growth on culture. There is no evidence of an inflammatory condition of either kidney."

The patient states that following her discharge from the hospital in 1896 she suffered from a recurrence of her bladder symptoms with the discharge of blood and calcareous masses for a period of four years, at times the attacks being nearly as



bad as that at the time she entered the hospital. The condition gradually improved and disappeared under local treatment and she has had no treatment for the past ten years. At present there is neither pain nor nocturia.

From the clinical history and operative findings this case is evidently one of incrustated cystitis, the point of interest being that a severe process could persist in the bladder for so long a time, terminate in recovery, and leave little or no permanent disability. Also that during this time infection of the kidneys did not occur, at least to no permanent degree either by way of the ureters or the lymphatics.

**Squier, J. B.: Rectovesical Echinococcus Cyst.**  
*Ann. Surg., Phila., 1914, lix, 396.*

By Surg., Gynec. & Obst.

The author had a case which came to him with a diagnosis of enormous vesical calculus. The chief complaints were frequency of urination, intense pain in the penis, and a tumor in the hypogastrium. The tumor appeared to be a greatly distended bladder. Cystoscopy was impossible. There were six ounces of residual urine. Cystotomy showed multiple echinococcus cysts coming from the bladder. The bladder was drained. At a second operation another cyst which was found adherent to the under surface of the liver was removed. At a third operation the bladder was more freely opened. In the region of the trigone there was an opening as large as a half dollar which communicated with what was evidently the mother cyst, between the rectum and the bladder. A perineal opening was made into this cyst and the cyst cauterized with carbolic acid. The suprapubic bladder opening was closed and the recovery was uneventful.

B. S. BARRINGER.

**Judd, E. S.: Non-Papillary Benign Tumors of the Bladder.** *J. Lancet, 1914, xxxiv, 188.*

By Surg., Gynec. & Obst.

The author reports two cases of non-papillary benign tumors of the bladder. Both patients had all the characteristic symptoms of bladder tumor. The author states, however, and tries to establish the fact as a differential diagnostic point, that the hæmorrhage in these cases was sharper and more severe than is usual in papillary bladder tumors. Both cases were operated upon suprapubically. The statistical frequency of the tumors was one and two-tenths per cent. Microscopically, they were composed of smooth muscle fibers and fibrous connective tissue.

V. D. LESPINASSE.

**Gehrels, F.: The Endovesical Treatment of Papillomata of the Bladder by High-Frequency Currents.** *Australas. M. Gaz., 1914, xxv, 292.*

By Surg., Gynec. & Obst.

The author describes the principle of Beer's treatment as the application of the high-frequency current, or rather the Oudin current, in the interior of the bladder, directly to the papilloma. The

difference in Beer's treatment from the ordinary fulguration treatment consists in the fact that the electrode is applied directly to the papilloma, and under water. Beer avoids producing sparks, and effects coagulation of the tissue but no cauterization. By applying a current of varying strength for a greater or less period of time a coagulation and necrosis of the papilloma is effected, and after some days the necrotic parts are cast off. The treatment is done mostly in several sessions, always under control of the eye.

The author, after describing Beer's method with the high-frequency machine and Oudin resonator, and the method with the diathermic machine used chiefly by German surgeons, describes in detail his own methods, as follows: The diathermic apparatus is connected with the current collector. The anode is connected with a 10 to 6-inch indifferent electrode, that will be applied to the abdomen above the symphysis; the cathode is connected to the high-frequency sound that has the shape of a ureteral catheter of No. T. F. with a platinum tip. He regulates the strength of the current by trying the sound on a piece of raw meat. For introducing the sound an ordinary indirect catheterizing cystoscope is used. The urethra and bladder of the patient are anesthetized by 5 dr. of a 2 per cent solution of alypin, adding 10 drops suprarenin, applied for 5 to 10 minutes. Then the bladder is washed with oxycyanate of mercury 1:5000, and filled with 5 oz. of distilled water. After introduction of the high-frequency sound it is led towards the growth and between its villous processes.

The current is turned on for 15 to 30 seconds, and this procedure repeated on different spots until the whole surface of the growth appears necrotic. The time of application is shortened the nearer the pedicle is approached in order to avoid injuring the bladder wall. The time required for one session is three to five minutes. The treatment is repeated every eight days, and continued until the whole growth is necrotic. The eschars are allowed to fall off by themselves. Where only the pedicle is left it is treated in the same manner. Where the current is applied the tissue becomes white. Sparks are rarely seen. Only a slight formation of gas takes place. Pain is experienced only if the bladder wall is touched and this is a warning sign. Should bleeding occur, the application of the current will stop it. The necrotic parts are mostly cast off in one week. Rest, bland diet, and urotropine are recommended during treatment. During the first month the bladder is washed with a 2 to 5 per cent solution of resorcin every two weeks to prevent recurrence.

The advantages of this endovesical treatment are summarized by the author as follows: It is easily done, and hospitalization is not necessary. It is painless, and under control of the eye. Nearly all papillomata can be attacked. There is the important hæmostatic effect. The dangers are as naught. It has high advantages over cystotomy and resection of the bladder. The mortality in



cystotomy is 2 to 10 per cent, and repeated operations, for recurrences may be necessary. The leading surgeons of Europe and America are using this treatment and report favorably.

The indications for treatment are tabulated as:

1. Papillomata, clinically benign, not exceeding the size of a walnut.
2. Recurrences of papillomata.
3. Hæmorrhages of malignant growths of the bladder.

The article closes with a differential diagnosis between benign and malignant forms of bladder tumors.

H. J. POLKEY.

**Viko, E.: Surgical Treatment of Urethrectal Fistulæ.** *J. Am. M. Ass.*, 1914, lxii, 1083.

By Surg., Gynec. & Obst.

Viko says that present methods of operation for urethrectal fistulæ result successfully in only 25 per cent of cases. The operation described by him consists in dissecting down to and around the fistulous tract between the rectum and urethra. The tract is tied, like a blood-vessel, close to the rectum and divided. A purse-string suture is then placed around the fistula close to the urethra, the ends of the suture being left long. Several flaps are then dissected loose alternately on each side of the ligated urethral end and stitched in place, one on top of the other, each suture line being located at a different plane. The long ends of the urethral tie are drawn through the center of the first flap and tied before the flap is stitched into place. The rectal tie is buried by two or three pleats of rectal wall. After building up this comparatively thick layer of tissue between the urethra and the rectum the latter is partly twisted and a sound part sutured to the layers of urethral flaps.

The author claims that this method of repair of urethrectal fistulæ is very satisfactory, but gives no data as to the number of cases on which it has been performed or the percentage of cure.

J. D. BARNEY.

## GENITAL ORGANS

**Grimm, C. E.: A Case of Double Cryptorchidism.**

*W. Virg. M. J.*, 1914, xiii, 339.

By Surg., Gynec. & Obst.

The author describes a case of bilateral cryptorchidism with surgical technique. He advises operation before puberty to minimize dangers of hernia and defective or malignant development. On the left side he employed the usual technique (Bevan) of incision and exposure, and found the testis had slipped into a blind pouch through the roof of the canal, affording a cord of sufficient length to allow the organ to be placed in the scrotum and retained there by merely contracting the neck of the scrotum by a purse-string suture. On the right side the testis was found at the internal ring, necessitating section of all structures except the vas, artery to vas, and spermatic artery,

to afford a cord of sufficient length. Primary union resulted, with a retraction of the right testis only, and that only as far as the external ring.

Grimm is loath to cut spermatic arteries, because of experimental evidence adduced by Moschowitz showing degenerative changes in the testes—with resected spermatic arteries. He approves of Davison's technique, which makes it possible without section of the spermatic artery to secure greater cord length by dissection of these structures out of the abdominal wall, freeing enough of the same to insure adequate length. The epigastric artery having been protected by a double ligature, and the posterior wall of the canal having been incised, the vas is located and freed at the internal margin of the wound and the spermatic artery located and freed along the external edge of the cut transversalis fascia.

The testis is sutured to the bottom of the sac, and the suture passed externally, and a fast loop made to afford a fastening for traction from without. To this suture loop is fastened a thin rubber band, the distal end of which is fixed by adhesive plaster to the thigh, giving the proper amount of traction. It is of course necessary to immobilize the thigh by plaster or starch dressing. Closure of the wound follows the usual principles of herniotomy.

LOUIS L. TENBROECK.

**Lilienthal, H.: Prostatectomy in a General Surgical Practice.** *Ann. Surg.*, Phila., 1914, lix, 373.

By Surg., Gynec. & Obst.

Basing his conclusions on the records of 80 prostatectomies, the author presents a strong case in favor of the two-stage operation and gives a comprehensive chart summary of all the cases with histories of 13 illustrative cases. Because of its many advantages he considers the suprapubic route the wisest, especially for the general surgeon, and follows this procedure in practically all of his cases. He contends that suprapubic cystotomy should be the first step even though it may then appear best to proceed with enucleation from below. He does not perform cystoscopy as a general rule, because he says it has some dangers and he can get a better view of the bladder during operation. Before the suprapubic opening closes he inserts the cystoscope through the fistula and makes a careful inspection for bits of slough or loose tissue which might form nuclei for subsequent stone. Three times he has observed calculi formation after prostatectomy.

He performs none of the renal function tests because he considers that cystotomy is fully indicated even with poor renal function. The quantity of urine, however, is carefully noted.

Most of the patients were badly nourished, feeble old men, average age 64 years, with hardened arteries and diseased kidneys. The series is not one of selected cases. "No one who applied for relief was refused the opportunity which surgery might hold out."

The first step of Lilienthal's operation consists in



cutting down to the space of Ratzius under local anæsthesia, the bladder is distended with air and with two traction sutures through the bladder wall the bladder is incised. The traction sutures on each side of the wound in the bladder wall are then made fast to the aponeurosis and a large tube placed in the bladder enucleation. The second step is performed 8 or 9 days later under general anæsthesia with no instrument in the urethra and the finger of an assistant in the rectum pushing up the prostate.

In reviewing results in his non-malignant prostatectomies, the author finds that in 37 cases in which the one-stage method was followed, 7, or 16.2 per cent, died, while in 33 two-stage prostatectomies only 2, or 6 per cent died. The ages averaged the same.

Among the 80 cases carcinoma was found in 7 and vesical calculi in 13. As to post-operative complications, he had 7 cases of epididymitis, 1 case of acute septic testicle, 5 cases of hæmorrhage, 3 of pneumonia and 3 of uræmia.

C. R. O'CROWLEY.

**Stevens, A. R.: Treatment of Certain Cases of Prostatic Obstruction by Cauterization by the High-Frequency Current.** *Am. J. Surg.*, 1914, xxviii, 93. By Surg., Gynec. & Obst.

In some cases it is possible to destroy prostatic tissue with the high-frequency current, the obstruction being thus removed. The author has successfully treated 4 cases and attempted to treat 2 more, but the latter patients complained so bitterly after instrumental manipulation that the treatment was discontinued after the first sitting. Intolerance to the cystoscope after good local anæsthesia may become a contra-indication and turn the tide in favor of operation.

The method is not suitable for large hypertrophies, but is good when a comparatively small portion of prostatic tissue causes a marked obstruction. It may also afford partial relief in the other types of hypertrophy when operation is positively refused. With the Oudin type of current, a single cauterization is not deep and progress is much slower in destroying prostatic tissue than it would be with a papilloma of the bladder. Three cases are reported.

FAXTON E. GARDNER.

**Cole, A. P.: Kidney Function Estimation in Preparation of Patients for Prostatectomy.** *Lancet-Clin.*, 1914, cxi, 466. By Surg., Gynec. & Obst.

The author emphasizes the value and explains the use of functional tests in estimating surgical risks in the preparation of patients for prostatectomy. Two tests are considered capable of giving all the necessary information: an estimation of the blood urea and repeated phthalein tests. The former is a test of retention and is of value only when the phthalein test is very low, so that in most cases only the one test is needed.

The interpretation of the phthalein test depends

upon comparative readings in each case. A marked decrease in the excretion of the dye invariably means severe derangement and repeated tests will demonstrate whether this is permanent or temporary. Lowering of kidney function from prolonged back-pressure, ascending infections, etc., invariably improves upon preliminary treatment of drainage by catheter or suprapubic incision, whereas the reduction due to a chronic nephritis shows little if any improvement. In the latter case the retention of urea in the blood is of considerable significance of an impending uræmia.

A careful clinical study of the case, particularly with respect to acute renal infections, is of equal importance in estimating a surgical risk. No case with an acute pyelonephritis should be submitted to operation even in the presence of a high phthalein. The author gives a very good review of the methods in use in preliminary treatment and in the estimation of the risk of operation.

FRANK HINMAN.

**Pilcher, P. M.: Transvesical Prostatectomy in Two Stages.** *Ann. Surg.*, Phila., 1914, lix, 500. By Surg., Gynec. & Obst.

In this article, which is the result of the author's personal experience, he states that his study of the pathology of chronic prostatism leads him to disagree with the theory of Tandler and Zuckerkindl that prostatic hypertrophy is always hypertrophy of the anatomical middle lobe. He believes that the two lateral lobes and the median lobe are usually involved, and that inasmuch as the obstruction is at the neck of the bladder and projects into the bladder, the natural avenue of approach is the transvesical route. He advocated the technique of a two-stage transvesical operation in every instance for the relief of benign hypertrophy of the prostate, for the reason that as a result of relieving the distention of the bladder three phases of kidney secretion are demonstrable, and during the second phase, lasting from a few days to a number of weeks, a period of danger occurs during which no surgical attack should be undertaken.

The author performs a preliminary cystostomy for the reason that following suprapubic cystostomy the patient is out of bed in twenty-four hours; the urinary output from the bladder is completely controlled by an apparatus which he illustrates; there is no unpleasantness or traumatism due to the passage of the catheter through the urethra, and the operation of transvesical prostatectomy is already half completed.

The author reports to date 28 successive successful cases in which he has followed this line of treatment, every case resulting in the control of urine by the patient and his ability to empty the bladder without the use of a catheter. He does not apply this technique to known or suspected cases of carcinoma of the prostate.

H. L. SANFORD.



# SURGERY OF THE EYE AND EAR

## EYE

**Credé-Hörder: Prevention of Gonorrhœal Ophthalmia** (Warum konnte die Blennorrhœe nicht abnehmen). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 116.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author directed a series of questions to lying-in hospitals and university gynecological clinics to determine the following points:

1. Whether there is any permanent injury to the child's eyes from the use of a prophylactic solution for ophthalmia. The answer in all cases was no.

2. What prophylactic is the best? The answer was generally silver nitrate, sometimes silver acetate and sophol.

3. Whether it is advisable to make prophylactic treatment compulsory and punish neglect of it by law. Among 51 gynecologists 25 favored compulsory prophylaxis, 20 were directly opposed to it, and 6 undecided. Among 20 directors of university clinics 8 were in favor of it, 10 opposed, and 2 undecided, while all of them were in favor of prophylaxis.

Among 110 ophthalmologists 79 favored compulsory carrying out of Credé's prophylaxis, 15 were undecided; of 17 professors of ophthalmology 13 were unconditionally in favor of it, 2 conditionally in favor of it, and only 2 opposed to it. While the morbidity is growing constantly less in hospitals, outside of them large numbers of infants still have gonorrhœal ophthalmia, so that new methods of prophylaxis must be established. MORALLER.

**Elliot, R. H., Henderson, E. E., Fleming, A., and Others: Discussion on the Use of Salvarsan in Ophthalmic Practice.** *Proc. Roy. Soc. Med.*, 1914, vii, *Sect. Ophth.*, 98. By Surg., Gynec. & Obst.

From a wide experience with opportunity for careful observation, ELLIOT brought his conclusions in regard to the use of salvarsan in ophthalmic practice. First, in relation to optic atrophy, he said he had never observed a case following the use of salvarsan, and in carefully collected reports from the other Indian hospitals not one was recorded; in fact, cases showing an atrophy of syphilitic origin reacted excellently to the drug. Second, that the best results were obtained by intravenous injection of 0.50 gm. to 150 lbs. body weight, repeated only until Wassermann became negative. In addition, mercurials and iodides were also used. Third, that best results were obtained in recent uveal inflammation. Muscular palsies reacted well. With tabetic cases and heredosyphilitic interstitial keratitis results were disappointing. Fourth, he referred to the opinion of Gifford that the results of salvarsan in

sympathetic ophthalmitis added a link to the evidence in favor of the protozoic origin of this disease.

HENDERSON read notes of two cases of late infection after cataract extraction in which recovery was rapid after the use of neosalvarsan.

FLEMING stated that at St. Mary's Hospital there had not been a case of injury to the optic nerve observed.

BROWNING said that in some cases of undoubted sympathetic disease the increase in large mononuclears was not noted.

LANG emphasized the variation in the mononuclear count in children especially under three years of age and the fact that care must be used in drawing conclusions from the blood picture for this reason. EARLE B. FOWLER.

**Lang, W.: Case of Sympathetic Ophthalmia, from Which a Secondary Cataract had been Removed after the Administration of Salvarsan.** *Proc. Roy. Soc. Med.*, 1914, vii, *Sect. Ophth.*, 95.  
By Surg., Gynec. & Obst.

The author reports a case in a male 46 years of age in which an eye, damaged by a gun-shot, was removed fourteen days after the injury. Iritis began in the previously sound eye fifteen days later, four weeks after the injury, and though quiet at the end of four months vision continued to decrease.

Two years later there was good light perception but defective projection; no ciliary injection; iris vascular, not atrophic and adherent to a pupillary membrane on the capsule of the cataract lens. Two intravenous injections of salvarsan 0.5 gm. were given 3 weeks apart with no general and slight local reaction. Five months after this, as the vascularization of the iris was reduced and the eye was less irritable, the cataract was extracted and still later an iridectomy done leaving a clear pupil and a vision of 55/24.

In the discussion PARSONS expressed his opinion that sympathetic ophthalmitis was a general infection as shown by the action of the salvarsan and the deviation of the blood picture from the normal.

FISHER spoke of two cases in which the blood picture indicated the disease, one before the appearance of other symptoms. EARLE B. FOWLER

**Lawford, J. B.: Case of Severe Post-Operative Plastic Iridocyclitis Treated by Neosalvarsan.** *Proc. Roy. Soc. Med.*, 1914, vii, *Sect. Ophth.*, 97.  
By Surg., Gynec. & Obst.

The author reports a case of plastic iritis coming on after a cataract extraction in a man 68 years old. Recovery was rapid after 0.9 gm. of neosalvarsan,

and later a recurrence cleared immediately following a second dose, the eye remaining quiet through further operative procedures. EARLE B. FOWLER.

### EAR

**Layton, T. B.: Examination of the Internal Ear and Hind-Brain by Stimulation of the Vestibular Nerve.** *Clin. J.*, 1914, xliii, 193.

By Surg., Gynec. & Obst.

Layton bases this article upon observation of the work of Bárány, supplemented by conclusions from his own work with these tests. He enumerates first the ways in which the vestibular nerve may be stimulated and the resultant phenomena, including the pointing and falling reactions, which occur in the direction of the slow movement of the nystagmus.

Bárány believes that it is the cerebellum which controls the coördination and it is stimuli passing to this which govern the pointing and falling reactions. He believes each set of muscles has a center in the cerebellum. On this theory a pointing error is evidence of disease of the cerebellar cortex or of the efferent fibers passing from it. There is reason to believe that the vermis is associated with movements of the trunk and the hemispheres with those of the limbs. A brief epitome of the central connections of the vestibular nerve shows that they are numerous and far reaching. The author believes that the results of examination of the vestibular nerve is therefore valuable in diagnosis of nervous disease, especially in suspected cerebellar tumor, and that the method will be developed so as to aid greatly in localization.

EARLE B. FOWLER.

**McCall, Jr., J.: Indications for Surgery of the Ethmoid and Sphenoid Labyrinth; with Report of Cases.** *J. Indiana St. M. Ass.*, 1914, vii, 148.

By Surg., Gynec. & Obst.

The author divides the inflammatory diseases of the ethmoid and sphenoid into: (1) Acute catarrhal inflammation; (2) acute suppurative inflammation; (3) chronic catarrhal inflammation with hyperplasia; (4) chronic suppurative inflammation; and (5) chronic catarrhal inflammation with suppuration.

The cases under the first two classes clear up under palliative treatment.

The cases of the chronic type the author treats surgically by removal of the middle turbinate and extermination of the ethmoidal and sphenoidal labyrinth in order to obtain drainage and permit medication to reach the site of the diseased tissues.

He cites the history of several cases illustrating the results obtained by treating these cases surgically in which he relieved not only the local nasal and eye symptom but neurasthenia, stomach trouble, and dysmenorrhagia.

CLINE gave it as his opinion that too many nasal conditions were treated surgically which would clear up under alterative and eliminative treatment.

SPOHN relieves many of these cases of ethmoid inflammation by submucous resection of the septum and believes in doing as much surgery in the nose as is necessary to insure the patient against mouth-breathing.

PARKER urged that before and after all intranasal operations of any magnitude the refractive condition of the patient be thoroughly gone over.

ELLEN J. PATTERSON.



# SURGERY OF THE NOSE, THROAT, AND MOUTH

## THROAT

**Bucher, W. M. and Chamberlin, W. B.: Alcohol Injections in Tuberculosis of the Larynx.**  
*Interst. M. J.*, 1914, xxi, 379.

By Surg., Gynec. & Obst.

The gratifying results obtained in the relief of pain and dysphagia in laryngeal tuberculosis of the aryteno-epiglottic type, with the ease of administering the treatment proves its great practicability.

The technique is as follows: With the patient in a horizontal position, the left side of the larynx is grasped with the first and second fingers of the right hand and with the thumb-nail of the same hand the middle point of the superior border of the thyroid cartilage is located, at which point the internal branch of the superior laryngeal nerve pierces the thyroid membrane. The thumb-nail marks this point and the needle is introduced perpendicularly to the skin for a distance of 1.5 cm. Moving the needle slowly about until it causes sharp pain radiating to the ear, sufficient warm 85 per cent alcohol is then slowly injected to relieve the pain. The operation is then repeated on the other side. During the operation the patient should avoid both speaking and swallowing. ELLEN J. PATTERSON.

**Paterson, D. R.: Three Cases of Foreign Body in the Bronchus, Illustrating Points of Interest.**  
*Proc. Roy. Soc. Med.*, 1913, vii, Laryngol. Sect., 1.  
By Surg., Gynec. & Obst.

Paterson reports three cases of foreign body, pinkish in color, which color so nearly resembled the mucosa that extraction proved difficult.

TILLEY, MARTINEAU, and HASTINGS each reported a case of sarcoma of the nasopharynx treated by radium emanations. Each case was treated by inserting into the growth a tube containing from 40 to 82 mg. of radium bromide which was left in for twenty-four hours with disappearance of the growth in a few days. In the discussion which followed, the general consensus of opinion was that the nearer the infiltrating growths approach the embryonic tissue, the greater the likelihood that radium will prove beneficial. That all inoperable cases of sarcoma and epithelioma should be treated with radium even though the patient should have a recurrence of the growth sooner or later.

LAYTON reported two cases of bilateral abductor paralysis, both of which gave positive Wassermann reaction and improved under mixed treatment. He also reported a case of subglottic swelling of the larynx treated with salvarsan which improved rapidly, obviating the necessity for immediate tracheotomy.

In the discussion which followed it was noted that salvarsan in these acute obstructive laryngeal cases frequently works wonders, as it relieves dyspnoea immediately, while on the contrary potassium iodide first increases dyspnoea. ELLEN J. PATTERSON.

**Torek, F.: Laryngectomy Combined with Gastrostomy.** *Surg., Gynec. & Obst.*, 1914, xviii, 515.  
By Surg., Gynec. & Obst.

The dangers incident to the feeding of a patient through a tube in the oesophagus after extensive laryngectomy, especially if complicated by resection of the pharynx, are injury to the suture line and infection of the sutures. These are likely to be followed by infection of the whole neck wound, separation of the tracheal stump, aspiration of discharges, and pneumonia.

To circumvent these dangers Torek performed a Witzel gastrostomy after completion of the laryngectomy and fed his patient through the gastric fistula. Although the case was far advanced, requiring not only the removal of the whole larynx and epiglottis but also a resection of the anterior wall of the pharynx and base of the tongue, the after-treatment was much simplified by the gastric fistula feeding. The pharynx fistula closed four and one-half weeks after operation, and the patient was then able to swallow both fluid and solid food. The gastric fistula closed promptly.

The addition of a gastrostomy to the extirpation of the larynx does not add materially to the severity of the operation, as the laryngectomy is done by Torek under local anaesthesia. In advanced cases the dyspnoea forbids operating under inhalation anaesthesia unless a preliminary tracheotomy is performed, which, however, is preferably avoided in the interest of asepsis. Novocaine one-half per cent with suprarenin is employed. Deep injections block the superior laryngeal nerves and anaesthetize the tissues about the trachea and larynx. Superficial injections are made corresponding to the lines of incision. The stump of the transversely divided trachea is sutured to the skin. Through this tracheal opening an inhalation narcosis may be administered for the performance of gastrostomy. This addition to the technique will prove of good service in many difficult and extensive cases.

## MOUTH

**Sturgis, M. G.: Mixed-Cell Tumors of the Soft Palate.** *Surg., Gynec. & Obst.*, 1914, xviii, 456.  
By Surg., Gynec. & Obst.

Mixed-cell tumors, while most commonly found in the salivary glands, are occasionally found in other

portions of the face. Few cases have been reported from the soft palate. The author reports 14 cases from the literature and one from his own practice.

These tumors have their origin from misplaced embryonic cells, being "mesotheliomata of embryonic origin." They may develop in the young, the middle-aged, or the old. In the cases collected, 35 per cent developed after the age of 50. The duration of growth is generally two or three years; but it may vary from a few months to twenty or more years, and depends on the location and size of the growth and on the susceptibility of the patient to the resultant discomforts—interference with phonation, deglutition, and respiration. They occur on either side of the palate, rarely in the middle. They vary in consistency, according to the predominance of epithelial or endothelial, fibromatous, chondromatous, or myxomatous elements.

They are benign, but this benignity is doubtless due to the fact that their location demands early operation if there be any considerable growth, and since this increase in size in many cases is due to a marked growth of the epithelial elements, it seems reasonable to assume that these might undergo malignant transformation if they were not removed.

In view of the generally accepted origin of these tumors, the first case reported has another embryological anomaly—a didelphic uterus.

**Blair, V. P.: Dental Disorders and Peridental Infections; Their Relation to Neighboring Organs.** *Surg., Gynec. & Obst.*, 1914, xviii, 470.

By Surg., Gynec. & Obst.

The author states that oral sepsis has only lately received the attention it deserves and that, excluding the tonsils, it is the teeth and their root coverings that furnish the great atria of infection.

He calls dental caries the most common affliction of civilized races and says they are disseminators of

pathologic organisms through the blood and lymph streams.

He gives the percentage of antral empyemas due to dental infection as 50 per cent and believes that infections of the antral mucosa of dental origin are rare, but infection and suppuration in the submucosa is common.

The local effect of peridental infection may be of a chronic character or acute and extensive going to an alveolar abscess, as necrosis, cellulitis, or diffuse suppuration. Two forms of cellulitis he considers worthy of special mention, the chronic Holzphlegmon and Ludwig's angina.

In tubercular adenitis, tubercle bacillus was found in a carious tooth corresponding to the infected node and carious teeth are probably a part of entry of the mycosis.

He has seen three deaths from sarcoma and one from Hodgkin's disease, apparently of dental origin. He observed two of torticollis with early scoliosis relieved by opening an alveolar abscess in each.

He states that metastatic parotitis is dependent on oral sepsis traveling up the excretory duct. Premature loss of teeth may change the shape of the jaws and nasal chambers and irregular eruption of the teeth may cause nasal spurs and deviation of the septum.

In 12 of his cases of ankylosis of the jaws, 2 were due to scar bands in the cheek due to sloughing of dental origin.

In reviewing the eye, ear, and nervous systems in relation to diseased teeth he explains the phenomena as reflex irritation and found in 94 cases of tic douloureux, dental irritation the apparent cause in 26.

He has observed instances of cases of mental derangement with impacted teeth and in examining cases of epilepsy pays particular attention to the teeth.



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# INTERNATIONAL ABSTRACT OF SURGERY

SEPTEMBER, 1914

## MONTHLY COLLECTIVE REVIEW

### A COMPARISON OF THE MOST RECENT METHODS IN THE MANAGEMENT OF PLACENTA PRÆVIA

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WITHIN the past few years a revision of our knowledge of placenta prævia has taken place, resulting largely from the observation that many of these cases resulting fatally die from septic infection, which can often be traced to a vaginal tampon. This has led in many clinics to the abandoning of the tampon and has brought out a comparison with other methods of treatment.

That the mortality of placenta prævia under various forms of treatment is considerable is evident from Unterberger's study of the statistics in Mecklenburg-Schwerin (1). Although this German province is well cared for medically, the mortality of parturition in cases of placenta prævia is estimated for the mother at ten per cent; the foetal mortality rises from thirty to sixty per cent.

For medical purposes placenta prævia may be divided into those cases which are complete or central, and those cases where but a portion of the placenta is over the internal os and where the membranes can be reached at some point.

There is in this, as in other serious obstetric complications, a disposition in all countries to transfer the parturient patient, whose case presents serious complications, to the hospital for treatment. Many patients, however, cannot or will not enter the hospital and must be treated in their homes.

Where a patient is without hospital facilities, the suggestion of Doederlein (2), that placenta prævia should be treated whenever possible by the free rupture of the membranes, is of practical

value. This may be accompanied by the administration of those drugs which produce tonic but not clonic uterine contractions. The pressure of the presenting part against the placenta checks hæmorrhage and spontaneous expulsion of the foetus usually follows.

If the patient remains at home the danger of septic infection increases in proportion as the attendant is unskilful or lacking in aseptic precautions, and with the method of treatment employed. Discarding the tampon as inefficient and promoting infection, two methods of treatment are available in private houses. The first is Braxton-Hick's method of version, whereby the leg of the child is brought down and pressure made upon the placenta by the lower portion of the child's body. It is essential for the success of this method of treatment that no effort be made at delivery after version has been performed. The lower portion of the uterus in placenta prævia is so vascular and softened by the abnormal position of the placenta that rapid extraction of the foetus inevitably causes severe and often fatal laceration. Rapid and forcible delivery of the foetus are both forbidden by Pinard, and his warning may be accepted as sound.

A more recent method of treatment available in private houses is the introduction of a dilating bag. The majority of obstetricians introduce this bag through the torn membranes or through the placental substance into the cavity of the amnion.

Cragin (3) employs the bag without rupture of the membranes and without perforation of the

placenta. He believes that by this method the interests of the child are better conserved without detriment to the mother. Those who employ the dilating bag are careful not to use the largest size, and to exert pressure gradually and with as little disturbance as possible. Some prefer to employ the bag before practicing combined version. The introduction of the bag is not always easy for those who are not accustomed to obstetric manipulations, and in unskilful hands the attempt may separate the placenta extensively and increase hæmorrhage.

The results of the treatment of placenta prævia by rupture of the membranes, the use of the bag, and combined version without extraction, are given by Couvelaire (4), as follows: In 162 cases, with a maternal mortality of 6.7 per cent, and a foetal mortality ranging from 44 to 66 per cent.

In Zweifel's clinic, in 100 cases of placenta prævia, Schweitzer (5) treated 30 cases by combined version with a maternal mortality of 3.3 per cent, and a foetal mortality of 68.8 per cent. This was increased by the death of children a few days after delivery, bringing the foetal mortality to 87.5 per cent.

The intra-ammial use of the dilating bag was practiced in 39 cases, with a maternal mortality of 2.6 per cent, and a foetal mortality of 26.8 per cent. Where the membranes could be reached and ruptured, in 5 cases there was no maternal mortality, but a foetal mortality of 25 per cent.

Schweitzer, in his paper, has collected the mortality rate of twelve other clinics, and finds that in their experience placenta prævia has a mortality for the mother of from 5.3 to 10 per cent. In all clinics there is considerable maternal morbidity.

Cragin, to whom reference has already been made, in 49 cases of placenta prævia at the Sloan maternity, had a maternal mortality of 8.1 per cent, with a foetal mortality of 37 per cent.

All observers agree that placenta prævia is frequently followed by post-partum bleeding and that this may become fatal. Some would guard against this by the application of Momburg's bandage at the moment of delivery, and others would rely upon intra-uterine packing with iodoform or sterile gauze. That Momburg's bandage may become a source of danger is emphasized by Mayer (6). Anuria and albuminuria have followed its use and severe pain usually accompanies this method of treatment.

In cases where but a portion of the placenta is over the internal os, and dilatation proceeds rapidly, and uterine contractions require stimula-

tion, Trapl (7), and Hauch (8), and Meyer (9) have found benefit in the use of pituitrin. Care must be taken that the cervix is dilated, or readily dilatable, and that the presenting part is well in the pelvic cavity.

Where cases of placenta prævia can be transported promptly to the hospital while in good condition and before efforts have been made by vaginal manipulation to check hæmorrhage or bring about delivery, abdominal cæsarean section offers the best chance for mother and child.

Scipiades (10) reports 3 successful cases, one of them terminating in supravaginal hysterectomy. Two of them had living children upon admission, and these children survived the operation in good condition.

Pankow (11) from the Freiburg clinic, reports 38 cases of placenta prævia treated by abdominal cæsarean section with a maternal mortality of 2.5 per cent, and a foetal mortality of 2.9 per cent.

Fehling (12) believes that where the cervix is not dilated and the placenta prævia is central that abdominal cæsarean section is indicated. Zweifel, at the same congress, drew attention to the instant cessation of hæmorrhage following delivery by abdominal section.

For hospital cases, with the mother in fairly good condition, Frigyesi (13) considers abdominal cæsarean section the best method of treatment. Krönig (14) considers abdominal cæsarean section as the safest method of delivery for mother and child for patients transported to the hospital, and in this opinion Sellheim (15) concurred.

The author has for several years employed abdominal cæsarean section in cases of placenta prævia brought to the hospital. His operations up to date number eighteen, with no maternal mortality; the foetal mortality ranged from 40 to 50 per cent, many cases being brought to the hospital exsanguinated, the babies already dead.

A fair comparison of the results of what may be termed the private house treatment of placenta prævia by rupture of the membranes, the use of the dilating bag, and combined version, may be obtained by taking Couvelaire's statistics already given, of a maternal mortality of 6.7 per cent, and a foetal mortality of 44 to 66 per cent. With these results should be taken the statistics of Herz (16), who reports 820 cases of placenta prævia treated in private houses. Among these patients the expectant plan of non-interference, the rupture of the membranes, dilating bags, combined version, and other forms of vaginal delivery, were employed. The maternal mortality was 10.9 per cent; the foetal mortality ranged from 40 to 60 per cent.



When these results are compared with the results obtained by abdominal cæsarean section with a maternal mortality ranging from 2.5 per cent to nil, and under favorable conditions a foetal mortality of 2.9 per cent, the advantage of prompt treatment by section becomes evident.

This question of the treatment of placenta prævia has a wider significance than the mere handling of this condition. The results obtained in complicated parturition will not be improved materially until such cases are considered of equal gravity with ectopic gestation, appendicitis, ovarian tumor with twisted pedicle, and other serious intra-abdominal conditions. The latter cases are almost invariably taken to the hospital, and the comparatively low mortality of these serious conditions under good treatment is acknowledged. When complicated cases of parturition receive similar attention a decided improvement in mortality and morbidity must result. Those who have had experience in abdominal cæsarean section for placenta prævia have found that hæmorrhage ceases as soon as the uterus is emptied, that the uterus contracts promptly and that intra-uterine packing with 10 per cent iodoform gauze carried from above through the cervix and vagina is an efficient means of checking post-partum hæmorrhage and preventing relaxation. Simultaneously with delivery the patient may receive intravenous saline transfusion which acts as a powerful stimulant. These surgical advantages can scarcely be duplicated by methods which the general practitioner can use in private houses.

Where the placenta is not central, but extends upon the upper uterine segment, infiltration of the

uterine muscle with blood and necrobiosis may be present. In these cases if the uterine muscle be softened considerably it may be necessary to terminate the operation by supravaginal hysterectomy. The causes for this condition are not clear, but unquestionably autolysis is present, and partial separation of the placenta has caused gradually the extensive infiltration with blood. This condition must be kept in mind, not only in dealing with partial placenta prævia but with accidental separation of the normally implanted placenta. It is most important when it occurs in the upper expulsive segment as it may interfere with permanent contraction of the uterus.

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# ABSTRACTS OF CURRENT LITERATURE

## GENERAL SURGERY

### SURGICAL TECHNIQUE

#### OPERATIVE SURGERY AND TECHNIQUE

**Bartlett, W.: A Simple Method of Sterilizing and Storing Catgut.** *Surg., Gynec. & Obst.*, 1914, xviii, 633. By Surg., Gynec. & Obst.

Small coils of catgut, strung on a thread, are dried for four successive hours at a temperature of 80°, 90°, 100°, and 110° C. in a dry heat sterilizer, care being taken to avoid a damp day and steam. The material must be protected by gauze from contact with metal.

The catgut is placed in albolene for a few hours until clear, then the temperature is raised gradually on a pan of sand to 160° C. and kept at that point for an hour. The container must be lined with thin paper.

The catgut is lifted out of the oil by grasping the thread, the excess oil being allowed to drip off, the thread is cut and the coils dropped into a solution of iodine crystals in Columbian spirits. For catgut No. 00, the proportion is one part by weight of iodine to 700 parts by volume of spirits; for No. 0, 1 to 600; for No. 1, 1 to 500; for No. 2, 1 to 400; for No. 3, 1 to 300; for No. 4, 1 to 200.

The catgut is ready for use as soon as it turns dark.

It will not deteriorate in storage, and coils may be used as needed.

#### ANÆSTHETICS

**Pal, J.: Papaverine as a Vasomotor Agent and Anæsthetic** (Das Papaverin als Gefässmittel und Anæstheticum). *Deutsche med. Wchnschr.*, 1914, xl, 164. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Papaverine has a local anæsthetic effect; 1 to 2 drops of a ten per cent solution completely abolish the corneal reflex in the rabbit, while the pupil is moderately dilated. This explains the effectiveness of the local use of opium in the form of a salve to decrease pain. Papaverine not only paralyzes the smooth muscle of the intestine, but also the blood-vessels. It can be used with good results in all cases of high blood-pressure, for it decreases the pressure. It has also been used by the author in hæmoptysis. The doses were as high as 0.04 gm. intravenously and 0.1 gm. subcutaneously. Not more than 0.06 by mouth or subcutaneously and 0.01 intravenously should be given as a first dose. Narcotine has the same qualities as papaverine, but the doses must be somewhat larger.

KOCHMANN.

## SURGERY OF THE HEAD AND NECK

#### HEAD

**Aigrot and Leriche: Resection of the Auriculo-Temporal Nerve and Its Effect on Parotid Secretion** (De la resection du nerf auriculotemporal et de ses effets sur la sécrétion parotidienne). *Lyon chir.*, 1914, xi, 242. By Journal de Chirurgie.

It has been known since Claude Bernard's time that the auriculotemporal is the secretory nerve of the parotid gland. In man the glandular branches originate back of the maxillary condyle and form a plexus from which the secretory fibers proceed. The incision for section of the auriculotemporal, a vertical incision 3 cm. long between the tragus and the zygomatic tubercle, reaches the nerve above the origin of the glandular branches; but it is easy to dissect the trunk up to the parotid, and then, by slow continuous traction pull it out for 3 or 4 cm., which destroys all the parotid fibers.

This operation is indicated according to Leriche and Aigrot in three classes of cases: (1) In stubborn salivary fistulæ of the parotid or of Stenson's duct; (2) in the hypersalivation of certain diseases of the œsophagus, especially cancer; (3) in ærophagy caused by excessive salivation.

Leriche has used the operation in a case of salivary fistula and one of ærophagy with marked digestive disturbances. In the former case the salivary secretion persisted for five days, but much less abundantly, then stopped suddenly and the fistula closed. In the other case the digestive disturbance had been attributed to gastric hypersecretion or ulcer and treated medically without success. Leriche concluded they were due to ærophagy caused by excessive salivation and resected the right auriculotemporal with excellent results. The salivary secretion was reduced and the ærophagy with the accompanying digestive troubles disappeared. CH. LENORMANT.



**Mackenzie, G. W.:** *The Diseases of the Maxillary Sinus.* *J. Ophthalm., Otol. & Laryngol.*, 1914, xx, 199.  
By Surg., Gynec. & Obst.

To obtain the best results in the treatment of diseases of the maxillary sinus it is frequently necessary to have the coöperation of the rhinologist and the dentist. This is especially true in acute maxillary sinusitis which may be endonasal or dental in origin; also in osteomyelitis, caries, necrosis, or foreign body in the antrum, or dentigerous cysts, all of which give rise to symptoms that prompt the patient to seek the dentist.

In suspicious cases of inverted or unerupted teeth the diagnosis should be determined by a skiagraph.

ELLEN J. PATTERSON.

**Dunning, H. S.:** *Some Surgical Conditions of the Jaw.* *Laryngoscope*, 1914, xxiv, 520.  
By Surg., Gynec. & Obst.

Fractures of the jaw, epuli, and dentigerous cysts are surgical conditions frequently overlooked by the general surgeon as well as by the dental surgeon.

True fractures of the upper jaw are rare, but fractures of the lower jaw are very common; and all are treated by means of wire cribs or rubber splints cemented to the teeth.

Epuli occur most often in Jewish women of middle age during pregnancy and are treated by thorough removal of the periosteum, alveolar process, and teeth involved.

Dentigerous cysts are treated by removal of the sac and contents and thorough curettage of the bony cavity.

ELLEN J. PATTERSON.

**Cadwalader, W. B.:** *A Comparison of the Onset and Character of the Apoplexy, Caused by Cerebral Hæmorrhage and by Vascular Occlusion.* *J. Am. M. Ass.*, 1914, lxii, 1385.  
By Surg., Gynec. & Obst.

Spontaneous intracerebral hæmorrhages are apt to be large; very small hæmorrhages are rare. Of seventy-two specimens examined, only four measured less than 4 cm. in their broadest diameter.

It is certain that large hæmorrhages are always fatal, and it is also certain that small hæmorrhages may be also, and it even seems probable that hæmorrhages are always fatal, no matter whether small or large.

When repeated attacks of apoplexy with hemiplegia occur in the same patient at different times, the final or fatal attack may be due either to softening or to hæmorrhage, but the former non-fatal attack is invariably caused by vascular obstruction and softening and not by hæmorrhage. Repeated attacks of intracerebral hæmorrhage are not compatible with life.

Small and moderate-sized lesions within the brain, generally described as cysts, are apt to be considered the result of vascular occlusion; but in some instances such lesions may be produced by hæmorrhage which has become healed. Their true origin in some cases seems uncertain, but they have been classified by the author as softenings.

The duration of life is generally longer with small hæmorrhages than with large ones. Sudden death within a few minutes after the onset of apoplexy does not occur, even though the lesion is a large one. It is remarkable that fairly large hæmorrhages may not in all instances cause rapid death. Spiller has recorded a case in which a clot was found partly encapsulated and measured 7 by 2.5 cm., yet the patient lived almost two months.

The type of apoplexy produced by hæmorrhage and by vascular obstruction is not of a distinctive kind. The onset and character of the apoplexy may be exactly alike, though the lesion is entirely different. But a sudden onset with rapidly developing and persistent coma usually indicates hæmorrhage. A slow onset with premonitory symptoms without profound coma may be due to hæmorrhage or to softening, but the less severe the disturbance of consciousness the more likely that it is caused by softening and not by hæmorrhage.

Premonitory symptoms are not characteristic of the lesion; as a general rule, they are recorded in the milder types of apoplexy in which the onset is not abrupt.

Slowly increasing loss of consciousness ending in profound coma, known as ingravescent apoplexy, is generally due to hæmorrhage.

It is doubtful if hæmorrhage ever occurs without causing very distinct disturbances of consciousness, but it is certain that many softenings do occur without producing distinct apoplectic attacks. Most non-fatal cases of hemiplegia are caused by vascular occlusion and subsequent softening. The mere fact that life is preserved is in itself indicative of the absence of hæmorrhage.

The type of apoplexy probably depends more on the size of the hæmorrhage than its situation, but with softening, the rapidity with which the vessel is occluded may influence the rapidity of onset of the attack as well as the extent of the lesion.

EDWARD L. CORNELL.

## NECK

**Smith, C.:** *Does the Internal Administration of Potassium Iodide Have Any Effect on Thyroid Grafts in Guinea Pigs?* *J. Med. Research*, 1914, xxx, No. 2, 113.  
By Surg., Gynec. & Obst.

The relation of iodine in its various forms to the changes in thyroid tissue has been investigated by Marine in conjunction with Lenhart and Williams. They made a very thorough study of the histology of normal and goitrous thyroids and observed the effect of iodine on the glands. These authors worked especially on dogs and came to the following conclusions: (1) The thyroid glands are divided into normal, colloid, and hyperplastic glands. (2) When the iodine intake is lessened it is shown that the thyroid tends to undergo hyperplasia. (3) Iodine given to an animal with a hyperplastic gland causes the structure to become a colloid gland within two or three weeks.

Marine claims that a colloid gland is that form of thyroid most nearly related to the normal gland to which a hyperplastic gland can revert. He states that there seems to be a minimum amount of iodine necessary to maintain a normal gland structure, and when the amount falls below this minimum, hyperplasia begins. There is a progressive decrease in the iodine content in the thyroid from normal glands through the various stages of hyperplasia; in other words, the amount of iodine and the degree of thyroid hyperplasia vary inversely in relation to each other. The author further claims that thyroid hyperplasia is a physiological reaction to the needs of the body and is analogous to regeneration after partial thyroidectomy.

Smith, having in mind this work of Marine's and of other investigators, attempted to find out if in thyroid glands the administration of potassium iodide would in any way tend to overcome the thyroid need after partial thyroidectomy, as claimed by Marine, and thus prevent or retard the growth of the grafts—which Cristiani states is controlled by the need.

Some 54 animals, with 162 grafts, were used in these experiments, and the author was able to recover successful grafts in a great majority of the animals. Some young grafts were studied in order

to observe the early regeneration of the tissue. The younger grafts showed a central necrosis, with only the peripheral thyroid tissue persisting. The central necrotic area became gradually replaced by a growth of connective tissue from the periphery. In the older grafts the thyroid tissue appeared normal, except for the presence of increased connective tissue. In some cases there seemed to be relatively more connective tissue in the animals which were given potassium iodide than in the controls, but the condition was not constant.

The author asserts that no conclusions can be drawn from his experiments as to the condition of the homotransplants. From his investigations he believes that the administration of potassium iodide to a guinea pig in which a piece of its own thyroid gland has been transplanted does not have any marked effect on the behavior of the graft. He did not find atrophy of the grafts, as reported by Cristiani, after the use of thyroid tablets. Secondly, he believes that thyroid grafts show early central necrosis. The peripheral acini only remain intact. Regeneration takes place by the growth of thyroid tissue from the peripheral acini toward the center. These findings, he states, agree with those of Von Eiselsberg, Sultan, Cristiani, and Enderlen.

GEORGE E. BEILBY.

## SURGERY OF THE CHEST

### CHEST WALL AND BREAST

**Bryan, R. C.: Cancer of the Breast in a Boy Fifteen Years Old.** *Surg., Gynec. & Obst.*, 1914, xviii, 545.  
By Surg., Gynec. & Obst.

One per cent of all tumors of the breast occur in the male; two per cent of this number are malignant. Trauma is responsible for 13 per cent of the female mammary carcinoma and 50 per cent of the male. The average age of the disease in the male is two years later than in the female. The youngest case is that of a boy 12 years of age, reported by Blodgett. The oldest is reported by Lunn in a man ninety-one years of age, a shoemaker. The author's case was a boy fourteen years and eight months old who had been struck by a golf ball on the right nipple. Four months later upon examination a small tumor was found, which when operated upon showed a scirrhous carcinoma of rather active cell proliferation.

Occasionally there are embryological dislodgments of subepidermal nodules which may extend into the region of the male breasts, which are histologically impossible to differentiate from carcinoma, yet they are not cancer. The beanlike submucous nodules found now and then in the appendix belong to this group. They are unquestionably of congenital origin. Aschoff calls them submucous naevi. In the report of Mayo's clinic by McCarty, these nodules are called carcinoma of the appendix

and have been observed, according to McCarty, in males from nine to eighty years of age.

**Pearson, W.: The Technique of Operation for Carcinoma of the Breast.** *Med. Press. & Circ.*, 1914, xcvi, 464.  
By Surg., Gynec. & Obst.

The author believes that the principles governing surgical operations for malignant disease should be: (1) To avoid dissemination and wound implantation of cancer-cells during operative procedures; (2) to minimize hæmorrhage and shock; (3) to minimize the risks of infection; (4) to avoid unnecessary mutilation or loss of function.

The work of Handley has shown that the "permeation" of cancer-cells along the lymphatic vessels takes place primarily along the lymphatic vessels in the fascial planes, and that invasion of the skin, muscles, and viscera is secondary. For this reason all the lymphatic and fatty fascial tissues from the axilla and axillary vessels, and from the chest wall including the fascial covering of the upper portion of the rectus abdominalis muscle, should be removed.

The author advocates removal of a large area of skin equidistant in all directions from the tumor, the removal of all subcutaneous and deep fascial covering from the clavicle above to the epigastrium below, and from beyond the midline in front to the posterior axillary fold behind, and the removal of the pectoral muscles with the exception of the



clavicular fibers of the pectoralis major, as this part may safely be left behind and furnishes a covering for the axillary vessels and nerves. This part of the muscle should also be removed if an upward extension has occurred.

The skin incision is carried well forward over the anterior axillary fold toward the outer end of the clavicle curving downward over the fullness of the shoulder. The incision is then carried through the fascial coverings of the muscle below the clavicle. This fascia is dissected off until the interval between the sternal and clavicular portion of the muscle is reached, then the incision is carried over the anterior border of the latissimus dorsi. This outlines the axilla. The insertion of the pectoralis major is next isolated, clamped, and cut close to the humerus.

With traction on this, the axilla can be cleaned out *en bloc* by sponging downward and inward. The object is to clean out the axilla completely and pack it off with gauze before the main tissue containing cancer is incised; also in this way the intercostal vessels can be exposed and clamped before being cut.

The author usually uses an axillary and sometimes a subclavicular drain for 48 hours.

This operative procedure is of advantage because it is practically bloodless and because there is a minimum possibility of dissemination of cancer tissue.

EUGENE CARY.

**Jacquero: Pressure on the Thorax in Place of Artificial Pneumothorax, in the Treatment of Pulmonary Tuberculosis** (La compression thoracique en remplacement du pneumothorax artificiel dans le traitement de la tuberculose pulmonaire). *Schweiz. Rundschau f. Med.*, 1914, xiv, 417.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Having observed that the insufflation of a very small amount of nitrogen into the thoracic cavity has a favorable effect on the symptoms of tuberculosis, the author tried to produce a similar effect by applying a band around the thorax. The band, which is passed around the lower part of the thorax, has small laces that enable it to be fitted, and is kept from slipping down by two bands over the shoulders. It is gradually drawn tighter and finally is left on day and night. Wearing it changes the type of breathing markedly and is said to act favorably on pulmonary tuberculosis.

BURCKHARDT.

**Murphy, J. B.: Sarcoma of Thymus.** *Surg. Clin. J. B. Murphy*, 1913, ii, No. 5.

By Surg., Gynec. & Obst.

A woman of 69 was admitted on account of a large mass on the anterior chest wall, just below the root of the neck. Twenty years before she had noticed a small hard mass to the left of the median line on a level with the third rib. Ten years later she noticed a similar mass to the right of the median line. These gradually approached each other and seemed to coalesce. About one year previous she

had noticed a third mass in the midline above the other two. This mass had been growing rapidly in size, especially in the past three or four months. When admitted there was a large, pyramid-shaped tumor pointing toward the chin, irregular in shape and consistence, but definite in outline; the base was hard and fixed to the sternum and costal cartilages, with areas of softening above; the large lobe pointing toward the chin was very hæmorrhagic and soft. She had never had any constant pain—only occasional twinges of sharp pain. The mass did not pulsate.

In the autumn of 1911 she had a continuous hæmaturia, passing large clots of blood as well as bloody urine. She was in bed six weeks, but had no pain over the kidney region at that time or at any time since.

The tumor was aspirated on both sides and bright red blood withdrawn. The needle was put in some distance under the skin and the condition found to be aneurismal sarcoma. Operation was deemed inadvisable, but X-ray treatments were advised. The latter course showed necrosis of the skin and formation of a clot preventing hæmorrhage. The skin destruction was from tumor invasion and was not caused by the X-ray.

Up to 1912 there were reported fifty-four cases of the various types of sarcoma. The carcinomata are rare, only 11 cases being recorded. These two types constitute the great bulk of tumors in the thymus. The mixed and the benign tumors occur less frequently.

**Heimann, F.: Experimental Study of the Thymus, the Ovaries, and the Blood Picture** (Thymus, Ovarien, und Blutbild. Experimentelle Untersuchungen). *München. med. Wchnschr.*, 1913, lx, 2829.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Clinical observations support the hypothesis that the ovaries secrete substances that inhibit lymphocytosis, while the products of secretion of the thymus gland cause a lymphocytosis.

Heimann made an experimental study of the effect of the thymus and ovaries on the blood picture in rabbits. The ovaries or thymus glands of the animals were removed and after a certain length of time the juices expressed from ovaries or thymus glands were injected intraperitoneally. After the extirpation of the ovaries a true lymphocytosis developed; after the injection of ovarian fluid there was a rapid fall to below normal in the lymphocyte count; after the injection of thymus extract a rise was noted. After thymectomy a fall in the lymphocyte count was observed; it rose again, however, after the injection of thymus extract, while after the injection of ovarian extract there was a fall again. Therefore, the conclusion is that failure of the thymus secretion causes a fall in the lymphocyte count; administration of thymus substance, a rise. After removal of the ovaries the lymphocyte count rises; after the injection of ovarian juices it falls. The thymus and

the ovary have an antagonistic effect on the blood picture: thymus extracts increase lymphocytosis; ovarian extracts decrease it.

KLOSE.

### TRACHEA AND LUNGS

**Bilweis, I. I.: An Unusual Case of Stenosis of the Trachea, as a Result of Primary Tuberculosis of This Organ** (Un cas rare de sténose de la trachée par suite de tuberculose primitive de cet organe). *Trav. de la clin. chir. Propéd. du Prof. Oppel*, 1913, v, 187. By Journal de Chirurgie.

A woman of 39 had had a goiter for 9 years. For a year she had been complaining of difficulty in respiration, dyspnoea, and cough, but no signs of syphilis or tuberculosis.

On admission to the hospital the dyspnoea was extreme. Oppel immediately performed strumectomy and then tracheotomy. In spite of this, the asphyxia continued and the patient died in 48 hours. During life the existence of an obstruction at the bifurcation of the bronchi had been recognized.

At autopsy, retraction of the bronchi was found for a distance of 15 mm.; the mucous membrane was thick, indurated, and yellowish; the right bronchus was more contracted than the left, and on the external wall there was a caseous and calcified gland. Below the bifurcation there were other hypertrophied glands. The lungs were normal; but on the pleura of the lower lobe of the right lung there was a small calcified tubercle. Microscopic examination showed that the lesions were typical tubercular nodules with giant-cells; but there was nowhere softening or caseation.

M. GUIBÉ.

### HEART AND VASCULAR SYSTEM

**Carrel, A. and Tuffier, T.: Anatomico-Pathological and Experimental Study of the Surgery of the Orifices of the heart.** *Med. Press & Circ.*, 1914, cxlviii, 539. By Surg., Gynec. & Obst.

As a result of their researches the authors state that pure mitral stenosis, certain aortic stenoses, and some stenoses of the pulmonary artery will be found, even in well-defined cases, to be benefited by surgical intervention.

Aortic stenosis may occupy one of three regions: valvular, supra-aortic, or subaortic. The subaortic variety is inaccessible to surgical treatment on account of its position below the fibrous ring at the level of the mitro-aortic canal; supra-aortic stenosis is rare. The truly surgical variety is the valvular stenosis, which is characterized by adhesions between the free borders of the valves, with thickening and malformation of their margins. It is simply a ring with indurated margins. Occasionally, the lesion extends as far as the fibrous circle of implantation of the valves on the aortic wall. Above the narrowing, the aorta is healthy; below, the heart suffers from the effect of the constriction on the current of blood.

Stenoses of the pulmonary artery present the same

anatomical forms. The valvular stenosis is the most frequent form. The fibrous arc of insertion is intact and the welding of the valvular margins creates a sort of diaphragm, convex toward the pulmonary artery, the more or less narrow central orifice of which is susceptible of enlargement. It is a paradoxical fact that the pulmonary artery is dilated above the seat of stenosis, but this is due to the loss of elasticity of its walls. There may be pure stenosis of the pulmonary artery in young subjects, without any alteration of the myocardium or congenital malformation of any other orifice. This condition is one eminently favorable for mechanical treatment.

Congenital tricuspid stenoses, which present the same characters, are especially suitable for surgical intervention on account of the integrity of the cardiac organ.

When an artificial lesion presents itself with the anatomical conditions which permit attack, while the state of the cardiac muscle and coats of the vessels justify the reasonableness of the intervention, it does not follow that such procedure is actually indicated. The lesion which tends to provoke grave or fatal trouble in the near future is the genuine indication that points towards the adoption of surgical efforts. It appears that such indication is of rare occurrence, but it does present itself definitely in certain cases. Some aortic stenoses of slowly continuous progressive development, and accompanied with cardiac hypertrophy, may likewise be regarded as mechanical lesions which are amenable to mechanical treatment; i. e., to enlargement of the valvular chink.

In operating, the dangers to be avoided are: wounds of the coronary arteries, hæmorrhage, entrance of air into the cavities of the heart and arteries, and finally, thrombosis. These dangers are not always grave. Wounds of the coronary vein may be tied with impunity, but the vessel should not be ligated at its extremity. Wounds or ligation of a coronary artery have a varying gravity, according to the part of its course affected. Wounds near the origin of the artery, even when made with the finest needle, always cause momentary arrest of the heart's action, which is followed by a relatively prolonged arrhythmia. Central application of a ligature is always fatal; the heart is arrested in diastole and resuscitation is impossible.

The occurrence of hæmorrhage within certain limits, is not very serious. Its intensity is naturally in proportion to the extent of the wound and also to the direction of the latter. The one hæmorrhage which is grave and difficult to arrest is that from the right auricle. There are several means to combat hæmorrhage. Hyperpressure should be maintained at a minimum, but in order to obtain a more complete provisional hæmostasis suitable to the surgery of the heart, it is necessary to arrest the circulation. This is done by applying an elastic ligature to the arterial pedicle for a short period or preventing the blood from entering the heart by compressing one or both venæ cavæ.



The entrance of air into the right ventricle does not present any great danger. On the other hand, this accident is an extremely grave one in the case of the left ventricle, as the air penetrates the coronary vessels, producing a fatal cardiac anæmia.

Thrombosis is an accident of corresponding gravity but it rarely occurs. The authors attach great importance to having the margins of a cardiac wound smooth and regular, thus preventing thrombosis. Very fine thread is used in suturing and the endocardium is not included.

The danger zones are then discussed in detail, and the sensitiveness of the various structures composing the heart are dealt with. Certain manageable zones are described, and, from their study, the authors conclude that the cavities of the heart may be opened singly and their walls resected without grave injury to the ulterior functional capabilities of the organ.

When preparing to operate it is necessary to interrupt the circulation to an almost complete degree. The arterial pedicle — pulmonary artery and aorta — may be compressed for a period not over forty-five seconds on account of the exaggerated dilatation of the right heart. With regard to separate compression of the aorta, this is better tolerated in proportion to the distance of its seat of application from the origin of the aorta and the possibility of even diminished irrigation of the nerve-centers. Simultaneous compression of the pulmonary veins produces death after some minutes through default of oxygenation of the cardiac muscles, but individual forcipressure of these vessels presents no gravity.

EDWARD L. CORNELL.

#### PHARYNX AND ŒSOPHAGUS

**Crump, A. C.: A New Aid for the Diagnosis of Stricture of the Œsophagus.** *J. Am. M. Ass.*, 1914, lxii, 1471. By Surg., Gynec. & Obst.

The author's method consists in the use of sausage-skin or gold-beaters' skin. Gold-beaters' skin is preferable, as it is tougher, but it cannot at present be obtained in satisfactory lengths.

The sausage-skin is cut in lengths of about 50 mm., thoroughly washed inside and out and placed in jars of a solution of 1 per cent liquor formaldehyde and 10 per cent glycerine. The distal end is tied with silk floss so as to make a bag; the proximal or mouth end is slipped over a rubber ferrule large enough for the skin to fit snugly, and tied.

The bag as it is then prepared is only a string. Before giving this to the patient it is best to cocaineize the pharynx and œsophagus to prevent retching and coughing; this, however, is not always necessary. The patient then swallows the skin with the aid of a little water. When the stricture admits a No. 15 French olive it is best to keep the skin straight by running it over a capillary rubber tube. This is easily done by first tying the upper end on the ferrule, holding the ferrule under a water-tap, and allowing the water to carry the tube through. There should be a small metal tip on the end of the tube so that the skin can be tied without collapsing the rubber. The stomach contents can then be aspirated to show if the tube has passed into the stomach. It is surprising how easily a patient with the smallest stricture can swallow one of these skins and how readily it untwists itself on being filled.

After the skin is down, a thick bismuth mixture is allowed to flow in from an irrigator holding a couple of hundred cubic centimeters, 20 ccm. at a time. After the bismuth is down the skin is pulled up a little and allowed to drop back in order that any kinks that may possibly form may be untwisted. This method of filling and pulling until the bag is full to the pharynx is continued, a stopper is put into the ferrule and the patient given a couple of teaspoonfuls of bismuth mixture to swallow outside the tube, a teaspoonful at a time to fill any irregularities or pockets not outlined by the bag. There may be some difficulty in removing the bag in the smaller strictures, but this need not occasion alarm.

The patient is placed face downward over the edge of the table and gentle but firm traction given the skin, the ferrule being held over some small vessel. The main thing is to take plenty of time.

EDWARD L. CORNELL.

## SURGERY OF THE ABDOMEN

#### ABDOMINAL WALL AND PERITONEUM

**Haeberlin: Treatment of Circumscribed and Diffuse Purulent Peritonitis following Appendicitis.** (Über die Behandlung der circumscripiten und diffusen eitrigen Peritonitis im Gefolge der Appendicitis). *Beitr. z. klin. Chir.*, 1914, xc, 99.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author reports 346 operations for appendicitis: 102 of them acute appendicitis; 34 interval operations; 6 incisions for abscess, all of these without any mortality; chronic appendicitis 66, with one death from peritonitis after rupture of the intestine; 114 of destructive appendicitis with

circumscribed peritonitis, with 4 deaths, 1 due to protracted anæsthesia, 1 to secondary hæmorrhage and 2 to progressive retrocæcal phlegmon; appendicitis with severe general peritonitis 24, with 6 deaths, or 24 per cent mortality.

The following principles were observed: In circumscribed suppuration, after sponging out the pus and tamponing the abdominal cavity, appendectomy was done, followed by complete closure of the abdominal wound, in which room for a small drain was occasionally felt. Douglas' pouch was always examined and if there was an exudate it was sponged up and the pouch irrigated through two long drains;

after that a complete closure of the abdominal wound was made.

In diffuse purulent peritonitis a thorough and long-continued irrigation of the whole abdominal cavity was given, and drains inserted on the right and left extending into Douglas' pouch, these being left for at least 24 hours. During the irrigation the patient was kept in the sitting position. The greatest advantage of the primary closing of the wound is that it prevents the occurrence of abdominal hernias. But drainage of the abdominal cavity is sometimes necessary, for the author believes, contrary to Rotter, that under pathological conditions there may be an intra-abdominal pressure that may cause the collected secretion to be discharged through the drain. Care must be taken that the drain does not become occluded.

BERGEMANN.

**Stein, I. F.: Eventration of the Diaphragm; with Report of a Typical Case with X-Ray Diagnosis.**  
*Surg., Gynec. & Obst.*, 1914, xviii, 547.

By Surg., Gynec. & Obst.

After a brief review of the literature, Stein reported a case of eventration diaphragmatica in a new-born babe. There was a marked asphyxia livida at birth requiring twenty minutes artificial respiration. At birth a dextrocardia, retracted abdomen, and undescended testicles were noted. The child could not nurse because of convulsive spells associated with deep cyanosis and very rapid respiration.

On the fourth day of life a röntgenogram showed an apparent absence of the diaphragm on the left side with bowel shadows in the chest and the heart on the right side. An attempt to give a bismuth enema failed, so the child was given subcarbonate of bismuth in the early morning feedings and röntgenograms taken three and six hours afterwards; another feeding with bismuth was then given and a second picture immediately taken. These radiograms positively identified the stomach and part of the small and large bowel in the left chest, and the diaphragm could be made out as a fine line above the visceral shadows. The child lived twenty-six days, during which time it suffered several severe crying spells, each associated with deep cyanosis and increased rate of respiration, and to one of which it finally succumbed.

Prior to the post-mortem a tracheal catheter was introduced through a tracheotomy opening and a bismuth suspension injected into the bronchi. A radiogram taken showed the lower lobe of the right lung to be the only portion functioning, and gave the best picture of the eventration. The relations of the viscera were photographed after opening the parietes. The viscera were removed *in toto* and preserved in kaiserling.

**Meyer, E.: Obturator Hernia (Über Hernia obturatoria).** *Arch. f. klin. Chir.*, 1914, ciii, 497.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

This work adds to the 51 cases of incarcerated obturator hernia published since 1875, 6 new ones

operated upon at the Leipzig clinic, discusses the symptomatology in detail, and tries to decrease the difficulty of an early and correct diagnosis by assembling all signs that are of any value. Obturator hernia is typically a disease of old women. The author's statistics show 79 per cent of the cases in women over 60 years of age, and they agree on this point with those of other authors. Aside from the pathognomonic signs of incarceration of hernia, symptoms of intestinal occlusion and Romberg's sign, vaginal or rectal examination often shows an elastic, painful resistance in the region of the obturator foramen. Differential diagnosis must be made from osteomyelitis of the pubic bone, intra-peritoneal exudate, and incarcerated femoral hernia. The diagnosis is, however, generally only a probable one; therefore operation should be early.

Taxis is dangerous, as in one-fourth of the cases there is gangrene on account of the narrow, sharp-edged, unyielding hernial opening. Herniotomy gives a very limited field of operation; therefore the operation of choice is laparotomy. It has the advantage over the femoral incision of giving a better view of the field of operation, of making it easier to loosen the incarcerated loops of intestine, and to perform intestinal resection if necessary. Recurrence is to be expected in 25 per cent of the cases; so an attempt should be made to avoid it by placing a flap of periosteum from the pubic bone over the opening, or, better still, by covering over the obturator foramen with the pectineus muscle. The prognosis has markedly improved in recent years.

Grasser's statistics, including 118 cases from 1720 to 1890, shows the high mortality of 78.81 per cent, while the author's show a mortality of 54.27 per cent. This high mortality is explained partly by the fact that the majority of the patients are old women in a poor state of nutrition.

From the fact that elderly women are chiefly affected, the author has drawn some conclusions as to the mode of origin of obturator hernia. The obturator foramen is comparatively larger in women than in men; frequent pregnancies cause laxity and folding of the peritoneum, which may project through the opening, which in a condition of emaciation is made more easily penetrable by the removal of the cushion of fat. Also subserous lipomata, which often co-exist with this form of hernia, may be responsible for its origin. There have never been uniform views as to the etiology of obturator hernia. In conclusion, the author gives a detailed account of the six cases treated at the Leipzig clinic.

HARF.

**Griffith, J. P. C.: Diseases Connected with Meckel's Diverticulum, with Especial Reference to Diverticulitis.** *J. Am. M. Ass.*, 1914, lxii, 1624.  
By Surg., Gynec. & Obst.

The author reports a case of inflammation of Meckel's diverticulum occurring in a child 19 months old. The condition followed a slight traumatism to



the abdomen. One week later, the infant began to complain of pain in the abdomen, which was diagnosed as indigestion. Several months later he passed a red-colored stool and continued to do so at intervals for several months. He became very anæmic but did not waste materially. The abdominal pain finally became very severe and it was necessary to employ opiates. The condition was relieved by enemata and the hæmorrhage from the bowels discontinued after the injection of horse serum. No definite diagnosis could be made and when the child was seen by the author it was in a moribund condition. It died from exhaustion five months after the injury.

Various lesions associated with this diverticulum are discussed briefly. Under inflammation, the etiology, symptoms, and diagnosis are considered. The diagnosis has rarely been made during life. The diagnostic features may be summarized as follows:

1. Localization of the pain and tenderness not so often at McBurney's point as somewhat higher and to the right of the umbilicus, or even about it, or in some entirely different region.
2. An area of puffiness or of firm resistance in this region.
3. An absence or slight degree of meteorism, at least early in the attack.
4. The presence of blood in the stools and in the vomited matter.
5. The history of the earlier existence of an umbilical fistula, or of some malformation elsewhere in the body.

EDWARD L. CORNELL.

#### GASTRO-INTESTINAL TRACT

**Pirie, A. H.: Preparation of Barium Sulphate for the Opaque Meal.** *Am. J. Röntgenol.*, 1914, i, 220.

By Surg., Gynec. & Obst.

The author discusses the disadvantages of barium sulphate in the preparation of an opaque meal and suggests the following method which overcomes the objections.

A gallon jar is filled to one quarter its capacity with Merck's barium sulphate, pure. Very hot water is added to nearly fill the jar and the mixture is stirred with a heavy stick to the consistency of rich milk. It is then allowed to settle for an hour, when the water is poured off. This procedure is repeated three times, and the mixture is then allowed to settle over night. In the morning the water is poured off, and the barium is ready for use.

The author uses the upper layers of the barium mud for stomach work, mixing it with buttermilk in the proportion of 1 to 3. The lower layers which are coarse and contain grit are used for the preparation of opaque enemata.

At the end of the day the remaining barium is again washed with hot water and allowed to settle until the following morning. Care should be taken that no milk or other food is added to the barium mixture.

WM. A. EVANS.

**Smith, G. M.: An Experimental Study of the Relation of Bile to Ulceration of the Mucous Membrane of the Stomach.** *J. Med. Research*, 1914, xxx, No. 2, 147. By Surg., Gynec. & Obst.

The author's purpose in this paper has been to record a number of experimental observations on the relation of bile in the presence of an excess of hydrochloric acid of 0.5 per cent strength to necrosis and ulceration of the mucous membrane of the stomach; to describe the character of the lesions produced by the interaction of bile with hydrochloric acid upon the epithelial surface of the stomach, and to define some of the conditions under which such lesions were most readily produced.

It occurred to the author that the action of bile on the stomach mucous membrane, although at times clearly harmless, could be intensified under abnormal conditions, so that it might cause ulceration of the gastric mucous membrane. The animals used for his experiments were the cat and the dog — chiefly the former. He found early that the gastric mucous membrane of the dog showed a greater resistance to injury produced by bile and hydrochloric acid than did the stomach of the cat.

The application of bile and hydrochloric acid to the stomach was performed in several different ways: (1) by direct application by incision of the stomach; (2) by a stomach tube; (3) after opening the abdomen, by injecting into the stomach bile and acid through an aspirating needle passed through the wall of the stomach; (4) by injecting bile and acid backward into the stomach through the pylorus by means of an aspirating needle passed through the wall of the duodenum; (5) by anastomosing the gall-bladder with the stomach, after ligating the common bile-duct, and subsequently introducing acid into the stomach of the animal by means of a stomach tube.

As a result of this study and the author's experiments, the following facts are obtained.

1. When introduced into the stomach of the cat or the dog, bile in the presence of an excess of 0.5 per cent hydrochloric acid may cause injury to the gastric mucous membrane, whereas bile or 0.5 per cent hydrochloric acid introduced alone into the stomach is without harmful effect.

2. Lesions of the gastric mucous membrane produced by bile in the presence of an excess of 0.5 per cent hydrochloric acid, consist of necrosis of epithelium and interglandular tissue with hæmorrhages into the mucous membrane, as a result of which small superficial ulcers may form.

3. Ulceration of the gastric mucous membrane, following the introduction of bile and hydrochloric acid into the stomach, injected by way of the duodenum, is produced most readily between the third and the fifth hour after meals, least readily in the fasting stomach or shortly after the ingestion of food.

4. If confined in the fasting stomach by ligating the œsophagus and the duodenum, bile in the presence of an excess of 0.5 per cent hydrochloric acid is



more toxic for gastric epithelium than either bile alone, or bile in the presence of an alkaline solution.

5. The presence of mucus in the stomach protects gastric epithelium against injury by bile and hydrochloric acid.

GEORGE E. BEILBY.

**Caille, P.: Clinical Diagnosis of Certain Forms of Localization of Ulcer of the Stomach and Duodenum** (Diagnostic clinique de certaines formes de localisation de l'ulcère de l'estomac et du duodénum). *Thèses de doct., Par.*, 1914.

By Journal de Chirurgie.

In this important work, based on 56 cases, the author shows the possibility of making a differential diagnosis of ulcers as to location and age. At present differential diagnosis can be made between ulcer of the pylorus, of the duodenum, and of the lesser curvature. In typical cases the diagnosis is easy; in others it is difficult or even impossible, depending on the age of the ulcer and the sclerosis accompanying callous ulcer.

1. In pyloric or juxtapyloric ulcer, the diagnosis is easy in marked forms with pronounced signs of stenosis, or a marked degree of Reichmann's syndrome, late pain, presence of residual liquid after fasting, hypersecretion of hydrochloric acid; these are the symptoms of reflex spasm of the pylorus, but the diagnosis of mild forms of Reichmann's syndrome is more difficult. The mere existence of late pain in slight paroxysmal crises without residual fluid or hypersecretion of hydrochloric acid, is the earliest manifestation of pyloric spasm.

2. The chief characteristic distinguishing ulcer of the duodenum from pyloric ulcer is that it does not react on the pylorus and produce spasm. The more recent the ulcer the more pronounced the symptomatology: localization of the pain on the right, frequent hæmorrhages, especially intestinal absence of gastric phenomena. Radiography shows particularly rapid evacuation of the stomach. In old cases the syndrome is modified by the addition of juxtapyloric symptoms, from spreading of the ulcer.

3. Ulcer of the lesser curvature is characterized by the more prompt appearance of the pain than in pyloric ulcer, by the fact that it is more resistant to alkaline treatment, that it is situated to the left of the median line and irradiates toward the back, and there are no pyloric symptoms. Radiographic examination shows a mediogastric spasm or stenosis, a retraction of the lesser curvature, the picture of a diverticulum. In case of recent ulcer the differentiation has to be made chiefly from ulcer of the duodenum; in case of old ulcer when the pyloric symptoms have been added.

J. L. ROUX-BERGER.

**Carter, R. M.: A Brief Consideration of Some Recent Tests for Gastric Carcinoma.** *Surg., Gynec. & Obst.*, 1914, xviii, 645.

By Surg., Gynec. & Obst.

The author considers a few of the more important tests for gastric carcinoma, and incidentally for

carcinoma in general, with a view of ascertaining the present status of laboratory diagnosis in this condition.

The tests fall into three groups: (1) those dealing with the stomach contents; (2) those dealing with the urine; and (3) those dealing with serological reactions.

In the author's opinion, the tests in the third group would hold the most promise theoretically, since it is reasonable to suppose that the blood of persons suffering from malignant disease would contain a substance or substances not present in the blood of healthy individuals.

However, an early specific diagnostic means for carcinoma has not yet been discovered. Many tests have been proposed which supply a small degree of confirmatory evidence, but in these cases they are too complicated and difficult technically, and consequently cannot be applied by the generally practitioner, who is the one most in need of a specific test, in order that he may get his cases to operation in time.

All the facts should be explained to the patient, together with the dangers of delay, and he should be allowed to choose between uncertainty and an exact diagnosis, obtainable only through an exploratory operation.

**Hartmann, M. H.: Hypertrophic Stenosis of the Pylorus in the Adult** (Sténose hypertrophique du pylore chez l'adulte). *Bull. Acad. de méd., Par.*, 1914, lxxi, 334.

By Journal de Chirurgie.

A man of 57 who had never had any stomach trouble began to lose his appetite and have digestive disturbances which grew worse continually. Hartmann examined him 18 months after the beginning of symptoms, when he showed all the signs of stenosis of the pylorus: vomiting, emaciation, peristaltic waves, stasis in the morning. The chemistry of the gastric contents was affected very little; there was a slight decrease in pepsin. In 1912, Hartmann performed pylorotomy and implanted the duodenum into the stomach. The patient made an uneventful recovery and is well at this time.

On examination of the specimen there was no engorgement of the glands. The pylorus was thick and hard. There was only a very small orifice surrounded by a ring of mucous membrane projecting into the intestinal cavity. Under the microscope there was no trace of new-growth. The pyloric muscle and submucous coat were thick and sclerous. The mucous membrane did not show any lesion except a slightly cicatricial zone which seemed to represent a healed superficial ulcer. The macroscopic appearance was almost exactly similar to that found in hypertrophic stenosis in infants, the only difference being that the inflammatory process was more marked than it generally is in infants, although it has been found in them in some cases. He thinks the inflammatory lesions in his case may be explained by the previous existence of a superficial ulcer of the mucous membrane. CHIFFOLIAU.



**Enriquez and Gosset: Exclusion of the Pylorus**  
(Remarques sur l'exclusion du pylore). *Bull. et  
mém. soc. de chir. de Par.*, 1914, xl, 332.

By Journal de Chirurgie.

Enriquez and Gosset believe that exclusion of the pylorus for benign lesions is not performed in France as often as it should be. Many surgeons say it is useless and that simple gastro-enterostomy is sufficient to give them excellent late results. If the statistics of the late results in a large number of cases are studied, however, it will be found that the percentage of insufficient, mediocre, or even bad results after simple gastro-enterostomy is entirely too high. They are generally excellent in marked cases of cicatricial stenosis, but are incomplete where the pylorus is patent, and often in duodenal ulcers. This insufficiency in the late results of simple gastro-enterostomy can also be shown clinically and radiologically. Clinically, some patients continue to suffer either continuously or in paroxysms, hyperchlorhydria persists in spite of diet and bismuth treatment, and hæmorrhage may reappear. Radiology shows that a greater or less part, sometimes all, of the food continues to pass through the pylorus. The authors publish 7 cases of exclusion of the pylorus, 4 of which are too recent for us to be able to judge of their final results; but 3 show clearly that secondary exclusion of the pylorus may produce recovery where simple gastro-enterostomy has failed. They recognize only one technique, that of entire exclusion with section of the stomach within the pylorus; the others are insufficient, as shown by Barsony's recent radiographic study. Exclusion is especially indicated in lesions at or near the pylorus with marked hyperæsthesia of the mucous membrane and extreme hyperchlorhydria, but not accompanied by stasis of food. Duodenal ulcer with relative patency of the pylorus, which may be demonstrated by röntgen rays, is a major indication for exclusion.

QUÉNU recalled that he had presented a patient 26 or 28 months ago in whom exclusion of the pylorus had been performed during a period of acute hæmorrhage from a duodenal ulcer. He saw him again recently and he was in excellent health, had never had any further hæmorrhage and was earning his living.

CUNÉO believes a distinction should be made between duodenal ulcers and pylorogastric ulcers, for the same treatment does not apply. He speaks only of ulcers which have caused no change in the size of the pylorus. In ulcers of the duodenum it seems rational to complete gastro-enterostomy by exclusion. In these cases the pylorus is not only open, but even gaping. This incontinence of the pylorus in conjunction with the hypertonicity of the stomach causes such a rapid evacuation of the stomach that it is sometimes difficult to collect the residue of the test meal. In such conditions exclusion is a useful, if not an indispensable supplement to gastro-enterostomy. As to pylorogastric ulcers, they are usually cured by simple gastro-enterostomy if it is well done.

If the bismuth passes through both the opening and the pylorus, or even through the pylorus alone, it makes no difference—if the functional trouble has disappeared. To show the usefulness of exclusion, a number of cases should be collected, such as those of Gosset, where after gastro-enterostomy many or all of the symptoms have persisted—to disappear only after a secondary exclusion was performed.

J. DUMONT.

**Stone, H. B., Bernheim, B. M., and Whipple, G. H.: The Experimental Study of Intestinal Obstruction.** *Ann. Surg.*, Phila., 1914, lix, 714.

By Surg., Gynec. & Obst.

In dogs a loop of the duodenum and high jejunum may be isolated by double ligatures and the continuity of the alimentary tract reestablished about the closed loop: such a condition is rapidly fatal.

The conditions of the experiment may be so controlled as to exclude circulatory disturbances, food derivatives, gastric, pancreatic, and biliary secretions as possible causes of death.

The dogs die with characteristic symptoms and present typical autopsy findings, the whole course of the post-operative disturbances suggesting an intoxication of some sort.

A fluid collects within the closed loops that is highly toxic, producing, when injected into normal dogs, a reaction much like that of dogs with closed loops. This toxin is believed to be the cause of death.

The toxin is formed by the mucosa of the closed loop, some of it being secreted into the lumen and some remaining within the cells of the mucosa.

If the closed loops be drained externally, the post-operative course of the animal is altered, but varying degrees of intoxication still are observable, and the presence of toxin within the mucosa of the drained loops is demonstrable.

Absorption takes place not only from the loop contents but from the mucosa direct, the latter being a quite important source of intoxication.

There are various possible explanations for the perversion of function that causes the mucosa to become a source of intoxication, but none are yet proved. The fundamental explanation of the change is as yet unknown.

It is possible by the repeated injection of sublethal amounts of the toxin to immunize dogs against fatal doses.

The parenchymatous organs, spleen, intestinal mucosa, etc., and particularly the liver, seem to be especially concerned in the production of the resistance against the toxin when dogs are immunized.

The extract of an immunized dog's liver, properly handled, will destroy the toxin *in vitro*.

It is believed that the intoxication observed in closed loops is quite similar to that existing in simple obstruction, and that the same toxin is the essential agent causing death in each instance.

The discovery of the importance of absorption



from the mucosa even in drained loops leads one to think that the establishment of an enterostomy for drainage in clinical cases may not meet all the requirements for successful treatment.

It may be possible to develop a method of direct defense against the toxin, as an auxiliary to the surgical relief of obstruction conditions.

EUGENE CARY.

**Speese, J.: Sarcoma of the Small Intestine.** *Ann. Surg.*, Phila., 1914, lix, 727.

By *Surg.*, *Gynec.* & *Obst.*

The author presents a statistical review of sarcoma of the intestine and reports 2 cases; one a lymphosarcoma and the other a myxosarcoma. He states that the condition is very rare, Smoker in 13,036 autopsies having found 13 cases of sarcoma primary in the small intestine. The condition is most common between the ages of 20 and 40 years, although a rather large number occur at an early age. Stern reports a case in which the condition was present at birth. The lesion may occur in any part of the intestine, although it is most common in the ileum, occurring 32 times in 53 cases. In 101 cases, 67 occurred in males and 34 in females. The condition is more common among the working classes and several cases have followed trauma to the gut.

Lymphosarcoma constitutes one of the chief types, and adjacent loops of bowel and mesentery are the seat of secondary growths. This type is the most malignant, the spindle-celled type tending to remain localized.

The majority of the tumors originate in the submucous tissues and may extend parallel to the bowel without ulceration. These may be single or multiple; if single, intussusception often results.

The symptoms in the beginning are usually of an indefinite nature. Generalized abdominal pain is usually first noted, followed by loss of appetite, nausea, and vomiting. Irregular bowel movements and distention of the abdomen soon follow. As opposed to cancer, the obstructive symptoms are not as marked, and the disease runs a much more rapid course — the average being 4 to 5 months.

The treatment of this condition is surgical, but in inoperable lymphosarcomata, benefit has followed the administration of arsenic.

EUGENE CARY.

**Gosset and Masson: Ductless-Gland Tumors of the Appendix** (Tumeurs endocrines de l'appendice). *Presse méd.*, 1914, No. 25, 237.

By *Journal de Chirurgie*.

Tumors of the appendix are rarely malignant. They are ordinarily discovered only on operation or at autopsy, and have become generalized in only 6 per cent of the cases observed thus far. They belong to two types. They are either cylindrical epitheliomata of the ordinary type or they are large tumors grossly analogous to the atypical epitheliomata of glandular origin. Recently Olerndorfer and then Marisch have shown that many of these tumors were rich in lipoids.

The authors study two personal cases of these small tumors of the appendix, neither of which gave rise to any special clinical symptoms. A histological description of the tumors is given which shows that they resemble glands with internal secretion much more than carcinomata. Masson had previously shown that throughout the intestinal mucous membrane there are special cells, mentioned long ago, and to which Ciaccio has given the name of intestinal chromaffines. These prismatic cells are scattered throughout the epithelium and have at their base an accumulation of granules, which chromic salts color yellow. They have another much more special property, that of fixing in the metallic form an ammoniacal solution of nitrate of silver. These argentaffine cells have the value of glands with internal secretion. The granules contained in the cells of the tumors of the appendix had the same reducing properties, and, moreover, in one of the cases these argentaffine cells had taken on the cylindrical form of the intestine and were arranged around a narrow lumen. The authors consider these tumors as hyperplasia, due, so to speak, to a pure culture of the argentaffine cells of the intestine. Under these new conditions the cells become organized so as to create the appearance of organs, analogous to what is found in hyperplasia of other glands with internal secretion, the suprarenal and parathyroid for example. These carcinoid tumors of the appendix should be considered benign tumors, in spite of the infiltration of their elements. They are only exceptionally malignant. In this and in the reducing property of their granules they resemble the pigmented naevi. These tumors do not pertain exclusively to the appendix. They may be found wherever the argentaffine cell exists in the normal condition, and the carcinoid tumors that have been described all along the intestine seem to be in the same group with these ductless gland tumors of the appendix. The specific silver reaction will show whether this opinion is justifiable.

J. DUMONT.

**Hertoghe: Appendicitis and Hypothyroidism** (Appendicite et hypothyroïdie). *Bull. Acad. Roy. de méd. de Belg.*, Brux., 1914, xxviii, 64.

By *Journal de Chirurgie*.

Fifteen years ago Hertoghe presented a work to the academy on slight thyroid insufficiency which he called chronic benign hypothyroidism. He maintains that the thyroid secretion takes a part both in the formation and disintegration of the albumin in every organ of the body; there is not a single tissue in the body that is not influenced by it. The frequency of hypothyroidism is explained by the great vulnerability of the gland. In the child it exhausts itself in the task of growth. In the woman it bears the fatigue of menstruation, gestation, and lactation. It is very sensitive to all toxic, microbic, or unhygienic influences. Moreover, we inherit an unknown number of taints from our ancestors, so that there are few individuals



who do not have a greater or less degree of thyroid insufficiency. This hypothyroidism ought to be taken into account always in daily practice just as tuberculosis and syphilis are.

Before the publication of this paper on benign hypothyroidism, Hertoghe had called attention to the frequency with which adenoids and hypertrophied tonsils were found in conjunction with thyroid insufficiency.

Since 1904, Delacour has claimed that appendicitis often co-exists with tonsillitis and that they have a common cause in thyroid insufficiency. This is easy to prove, either as Delacour did by taking cases of chronic appendicitis and examining them for hypothyroidism, or by taking a series of cases with signs of hypothyroidism and examining the appendix; in the great majority of these cases there will be sensitiveness to pressure in the ileocaecal region. This does not mean that all of these cases will develop acute appendicitis; but there is no guarantee that this will not occur, and no one can tell when it may occur. Sometimes a few hours will transform a chronic appendicitis into an extremely serious inflammation. Hyperæsthesia of the region being demonstrated, he advises operation. In the course of the past year the author has performed 126 appendectomies, 90 of them for chronic appendicitis. These 90 patients were operated on simply because they showed hypothyroidism and abnormal sensitiveness of the ileocaecal region. He does not think the operation was useless in a single case. He observed the following lesions: (1) In the cæcum. It was generally fixed deep in the iliac fossa by adhesions that were not very firm. It was often much congested and very vascular. These adhesions pass up the anterior surface of the cæcum in the form of transparent hyaline veils. In the most advanced cases they had passed over the appendix, fixing it either to the cæcum, the mesentery, or the ileum. In the adult they were thicker and vascular, forming veritable adhesive bands, interfering with the passage of matter through the large intestine. (2) The appendix, especially in children, was long, large, and succulent. It was twisted around its mesentery, sometimes curved in a hammock shape. It was generally filled with faecal matter. In the cases that were not far advanced it was free and floating. Later it became progressively immobilized by the hyaline bands. Under the microscope the appendix did not show any lesions as long as it was free and floating. The mucous membrane was intact and there were no lesions of the peritoneum.

J. DUMONT.

**Weiner, J.: Ileocaecal Tuberculosis.** *Ann. Surg., Phila.*, 1914, lix, 698. By Surg., Gynec. & Obst.

Ileocaecal tuberculosis affects both sexes alike; and tuberculosis is more frequent in this part of the intestinal tract than in any other. Tuberculosis of this region and of the appendix is present more often than is generally thought, according to the author,

and the diagnosis is hard to make; sometimes serial section alone will demonstrate the lesion.

In one of the cases of appendicitis the author reports a faecal fistula which took two operations to close. It was not until the third operation that tuberculosis of the cæcum was diagnosed by serial sections.

Weiner is inclined to believe that at least a large number of these cases are primary and cites one case with a secondary tuberculosis of the lungs following an appendiceal abscess. The anatomical position is favorable to the disease, as a pre-existing ulcer may be present.

The condition usually causes hypertrophy of all the layers and a partial stenosis; the tumor is usually freely movable.

There are two forms: (1) The enteroperitoneal form, which is difficult to distinguish from appendicitis. (2) The hypertrophic form; this should be differentiated from neoplasms.

Lateral anastomosis is the operation of choice. Eight cases were reported.

EUGENE CARY.

**Sorrel, E.: Chronic Intestinal Stasis.** (La stase intestinale chronique). *Thèses de doct., Par.*, 1914. By Journal de Chirurgie.

In this work, based on 20 cases, four of which are unpublished, Sorrel reviews the anatomy and pathological physiology of intestinal stasis. He shows that, besides the general form due to ptosis, atony of the intestine, or certain varieties of megacolon, there are localized forms that may be classified as follows: (1) Stasis by strangulation of the ileum — Lane's kink; (2) stasis in the cæcum and ascending colon — Wilnes' cæcum mobile, Jackson's membranous pericolicitis; (3) stasis caused by obstruction of the splenic flexure; (4) stasis produced by an obstruction of the sigmoid — stricture, partial megacolon, mesosigmoiditis, etc.

After reviewing the difference in symptoms between stasis of the right colon and that of the left, the former having a more serious effect on the general health, the author studies the different methods of treatment of chronic constipation. The surgical methods are: (1) Resection of bands. (2) fixation of the colon. This operation has been generally given up as a failure by German surgeons, but French surgeons have obtained good results from it in mild cases of stasis of the cæcum. All surgeons reject multiple fixation. (3) Entero-anastomosis. Sorrel gives preference to Lane's end-to-side ileorectostomy with plication of the rectosigmoid angle, which is in reality a low ileosigmoidostomy. (4) Colectomy. Lane and Pauchet have used this operation but seem to have given it up on account of pain, recurrence of constipation, and danger of occlusion.

It goes without saying that none of these operations should be performed until thorough medical treatment has failed, when the patient shows symptoms of auto-intoxication, and radiography repeated several times has shown that there is a material obstacle to the passage of faeces. GASTON PICOT.



**Murphy, J. B.: Congenital Dilatation of the Colon**  
**—Parry's Disease.** *Surg. Clin. J. B. Murphy*, 1913,  
 ii, No. 5. By Surg., Gynec. & Obst.

This case was found at operation to be due to a stricture of the rectum. The patient was a girl of 10, with a history of chronic constipation since birth. An X-ray picture taken after injection of bismuth showed enormous dilatation of the large bowel. Exploratory laparotomy showed the obstruction to be in the first part of the rectum, an annular band in the intestinal wall close to the junction with the second portion at the uterovesical fold. The obstruction was too low to permit of lateral anastomosis of the ileum below the obstruction. The abdomen was closed and the stricture closed under anæsthesia, then a plug was put in. Rectal dilators of increasing size were used daily for 25 minutes at a time, and the condition improved so much that the girl was allowed to leave in five weeks. She returned two weeks later and reported she was feeling better than ever, having a normal movement every day, and on examination there was found a lower rectal lumen larger than normal.

**Vuichoud, R.: Late Results of Operative Treatment of Cancer of the Large Intestine and Rectum** (*Résultats éloignés du traitement opératoire du cancer du gros intestin et du rectum*). *Thèses de doct.*, Lausanne, 1913.

By Journal de Chirurgie.

In an interesting paper the author gives the statistics of the hospital of the Canton of Lausanne.

1. Of cancer of the large intestine, from 1880 to the end of 1910, there were 61 cases, 8 of which were inoperable. Operation was performed on 53 patients, 27 men and 26 women, which are tabulated as follows:

10 to 30 years.....	2 cases
30 to 40 years.....	6 cases
40 to 50 years.....	14 cases
50 to 60 years.....	16 cases
60 to 70 years.....	12 cases
70 to 80 years.....	3 cases

LOCATION

Cæcum.....	14 cases
Ascending colon.....	6 cases
Transverse colon.....	8 cases
Descending colon.....	2 cases
Sigmoid flexure.....	23 cases

The average time between the first subjective symptoms of the disease and admission to the hospital was 6 months. Radical operation was possible in 28 of the 53 cases, or 45.9 per cent:

Cæcum and ascending colon.....	12 cases
Transverse colon.....	5 cases
Descending colon.....	2 cases
Pelvic colon.....	9 cases

On the cæcum, ascending and transverse colon the operation was always performed in one stage. On the descending colon it was performed once in one stage and the other time in two stages, colocolos-

tomy of the transverse to the descending colon, then resection two months later. All the resections of the sigmoid were performed in several stages. Among the 28 radical operations there were 25 recoveries and 3 deaths, one, two and five days after the operation, two from shock and one from fissure at the suture. Of the 25 cases that recovered 24 have been followed: 2 cases have survived less than a year, 2 from one to 2 years, 4 out of 5 from 2 to 3 years, 3 out of 5 from 3 to 4 years, 2 from 4 to 5 years, 1 from 5 to 6 years, 1 died between 7 and 8 years, 1 living between 8 and 9 years, 1 between 10 and 12 years, 1 between 13 and 14 years, 1 case died between 15 and 16 years, 1 case living between 16 and 17 years, and 1 between 19 and 20. Of the 15 living patients only one has a recurrence; all the others are in good health and working.

In 25 of the cases, or 40.9 per cent, the palliative operation only could be performed—on the cæcum and ascending colon in 8 cases, transverse colon in 2 cases, and the sigmoid in 15 cases. Direct entero-anastomosis was performed in 11 cases, an iliac anus in 6, a median subumbilical anus in 1, suprapubic anus in 7. The author believes the suprapubic anus more comfortable for the patient than the iliac. As a result of the palliative operation, 6 deaths occurred soon after operation, these 6 cases being cancer of the sigmoid with stenosis; 4 cases survived three to six weeks; 7, six weeks to three months; 2, three to six months; 6, six to twelve months; 2, twelve to eighteen months; 1, four to five years. Information was lacking in one case.

2. From 1887 to the end of 1910 there were 130 cases of cancer of the rectum, 102 of which were operated on, 62 men and 40 women. Two of them were twenty to thirty years old; 6, thirty to forty; 12, forty to fifty; 37, fifty to sixty; 35, sixty to seventy. The location was the anus in 11 cases, the ampulla in 65, and above the ampulla in 14. Of the 130 patients, 5 refused operation; 40, or 32 per cent, had the radical operation performed. Kraske's operation was performed in 17 cases with five deaths and two survivals for longer than three years; Kraske's operation with suprapubic anus was done in 2 cases; parasacral operation, 1 case, surviving more than three years; Kocher's operation, 1 case; perineal, 13 cases—1 death, five surviving more than three years; Herzen's operation, 1 case; abdominal combined operation, 5 cases—2 deaths, 2 survivals for more than three years. Altogether there were 32 operative recoveries and 8 deaths, 6 of them being men and 2 women. The operative mortality was 20 per cent; 10 patients have lived more than three years, 6 more than 6 years, 2 died 9 and 12 years after the operation without recurrence; 5 patients are still living, 4 without recurrence 13 and 17 years after the operation, 2 with recurrence 14 and 5 years after operation.

The palliative operation was performed in 62 cases: suprapubic anus in 48 cases, iliac anus in 11, subumbilical anus in 1, curettage in 1, linear rectotomy in 1. Since 1895 the suprapubic anus has



always been made. Operative or post-operative death, 12, or 19 per cent. Living after one to six months, 17; from one to two years, 12; more than two years, 6. The longest survival was five and one-half years.

G. LARDENNOIS.

**Sippel, A.: A New Method of Operation for Invagination and Prolapse of the Rectum in Women** (Eine neue Operationsmethode des Invaginationprolapses des Mastdarmes der Frauen). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 297.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The case reported was an invagination of the pelvic portion of the rectum through the anal part as large as a small fist, the anterior wall being chiefly involved. As there is recurrence in 50 per cent of the cases after colopexy, and resection of the intestine and drawing down of the flexure was too severe an operation for an old woman, the following operation was performed: After reposition of the prolapse the posterior walls of the vagina and cervix were split. The pelvic part of the rectum was exposed and four longitudinal folds made in the rectal wall; then the upper section of the plicated rectum was sutured to the posterior wall of the cervix. The vagina was resected and narrowed, the wall of the rectum being included, after the making of a fifth fold. Finally, there was transverse denudation of the posterior part of the anal portion of the rectum and longitudinal perineal sutures involving two layers.

PONFICK.

**Cunéo, B.: A Detail of Technique in the Abdomino Perineal Extirpation of the Rectum** (Sur un détail de technique dans l'extirpation abdomino-périnéale du rectum). *J. de chir.*, 1914, xii, 281.

By Surg., Gynec. & Obst.

Cunéo believes that in removing the rectum by the combined method the best disposition of the colon is to lower it to the perineum and fix it in the anus, provided the anus is normal. The difficult point in this procedure is the management of the mesentery and the vessels contained in it.

The inferior mesenteric artery branches in various ways, but only two of them are important. In the first the colic artery branches off 2 or 3 cm. below the origin of the inferior mesenteric and the trunk of the sigmoids 2 or 3 cm. below that. In the second variety the colic and the sigmoids branch off at the same place and may even have a common trunk. The ligation of the vessels for the purpose of lowering the colon should be made as high up as possible, near the origin of the inferior mesenteric. In the first variety there is some question as to whether it should be above or below the origin of the colic, but the author is inclined to favor the latter, as it renders the lowering of the colon easier. In the second variety the ligature should be placed as high as possible above the common origin of the branches. In practice it is only necessary to expose the inferior mesenteric at its origin near the body of the third lumbar. If it gives off a collateral near its origin, ligate above or below it as may be decided upon; if

there is no collateral for the first 3 or 4 cm. the ligation should be as near the origin as possible.

The ligatures to secure hæmostasis will be only on the arteries supplying the part to be removed. The superior hæmorrhoidal should be ligated as high as possible so as to remove the glands that may be involved as extensively as possible. But along the section of colon that is to be removed with the rectum they should be as near the intestine as possible. Practically the whole of the mesentery is preserved, containing not only the marginal anastomotic arch, but that formed by the spreading out of the branches of the inferior mesenteric. It is freed from its vertebral insertion and lowered with the mesentery. The author believes that this is preferable to preserving only the narrow band of mesentery containing the marginal arch, for the latter is apt to be stretched to excess or even ruptured in lowering the intestine, and, moreover, after the reestablishment of the circulation there may be an excess of pressure in the arch that favors gangrene.

The high ligation of the inferior mesenteric does not have any bad effect on the circulation.

AUDREY GOSS.

#### LIVER, PANCREAS, AND SPLEEN

**Eliot, Jr., E.: A Consideration of Certain Coexisting Lesions of the Gall-Bladder and Kidney.** *Ann. Surg.*, 1914, lix, 679. By Surg., Gynec. & Obst.

Eliot emphasizes the point that diseases complicated by the presence of other diseases (as, for instance, tubercular cervical lymph-nodes in the presence of syphilitic infections), or diseases occurring in one organ and affecting secondarily another organ (as for instance, the gall-bladder on the kidney, or *vice versa*), have not been thoroughly studied.

The writer has studied gunshot wounds of the kidney and has found 25 cases of pistol-shot wound of the kidney, in the majority of which some additional viscus had been injured. The gall-bladder is one of the most rarely injured of all, and he was unable to find mentioned in the literature a gall-bladder and kidney wound caused at the same time from the same shot. In the author's case, the gall-bladder also was perforated in two places.

The history of the author's case is as follows:

The patient, a man of twenty-five, was shot with a pistol of medium caliber, and taken to the hospital. Examination revealed a small circular orifice in the upper right quadrant about one inch below the costal margin, near the outer margin of the rectus muscle. There was marked hæmaturia, together with the symptoms of peritoneal irritation, both anteriorly and in the right flank. Four hours afterward, an opening along the margin of the right rectus disclosed a large amount of bile in the peritoneal cavity. The gall-bladder was very small, of healthy appearance, and presented near its fundus two openings through which the bullet had passed. The hepatic flexure of the colon was grazed. The right kidney was extensively lacerated and bleeding



into both the peritoneal cavity and the retroperitoneal space. The gall-bladder and right kidney were removed and the abdomen closed tightly around a cigarette drain. Convalescence was complicated by suppuration in the perinephritic tissue which quickly yielded to a counteropening. Three years later, the patient was in excellent condition.

The author cites several cases of a somewhat similar character reported by different writers, but none in which the gall-bladder and kidney were both removed at the same time on account of gunshot wounds.

The second part of the paper takes up the co-existing lesions of the kidney and gall-bladder of non-traumatic origin, and deals with an entirely different group. In one case a provisional diagnosis of carcinoma of the stomach had been made, and complicating it was a large pyonephrosis. A large stone was found in the right kidney; and upon operation to remove the right kidney, the peritoneum was opened and the gall-bladder and stomach palpated. It was then discovered that the pylorus, the stomach, and duodenum were intact and had no pathological changes whatsoever, but the gall-bladder was extremely large and adherent. The peritoneum was closed. On recovery the patient was advised that she should be operated upon for gall-bladder disease, but she refused. All her symptoms immediately subsided, and after about a year the soreness and tumor over the gall-bladder disappeared. She had no symptoms whatever referable to the stomach, was able to eat any food which she wished, and is, so far as the author is aware, still in good health.

In conclusion, the writer wishes to urge in all doubtful conditions of the abdomen the propriety of studying interrelated organs. He believes that in this last case the gall-bladder trouble was produced by the continued toxicity produced by the chronic pyonephrosis, and subsided upon its removal.

A. C. STOKES.

**Docq and Van Psever: Study of Tumors of the Ampulla of Vater** (Contribution à l'étude des tumeurs de l'ampoule de Vater). *Arch. d. mal. de l'app. dig. et nut.*, 1914, 145.

By Journal de Chirurgie.

The authors have had two cases of tumor of Vater's ampulla. The first was in a man of 51. The chief symptom was icterus, becoming more and more intense. The examination of the stools showed that 14 per cent of the fat taken had passed through without being digested. A cicatricial nodule was found at the opening of the bile-duct into Vater's ampulla. It was excised and the patient recovered. The second case was in a woman of 34. There was icterus of varying intensity; 80 per cent of the fat taken was found in the stools. On operation the common and cystic ducts and the gall-bladder were found distended. There was a sessile tumor in Vater's ampulla obstructing the bile-ducts and the pancreatic duct. It was excised and the patient died of hæmorrhage the fourth day. On autopsy the

lesions of autodigestion of the duodenal mucous membrane were found below Vater's ampulla.

Such cases are rare, the authors having found only 16 published cases. They emphasize one point: the importance of examining the stools, especially to determine the degree to which fat has been digested. The point of most importance is to determine whether the obstruction causing the icterus is above or below Vater's ampulla. The examination of the stools shows this. It was found that the pancreas was not involved in the first case and that it was in the second. It is necessary to determine the total quantity of fat not utilized and the relation between the neutral fat ingested and that recovered in the fæces. This amount in normal conditions ought not to be more than 3 per cent.

L. HOUDARD.

**Lejars, F.: Simulation of Biliary Calculi** (Les fausses lithiases biliaires). *Semaine méd.*, 1913, xxiii, 565. By Journal de Chirurgie.

In this short article Lejars reviews, with cases of his own, the different hepatic or perihepatic diseases which simulate gall-stones to such an extent as to deceive even careful observers. There are certain cancers and certain cases of ulcer of the stomach or duodenum which, even if there is no perceptible tumor, may be confused with biliary calculus merely from the symptoms to which they give rise.

Moynihan has insisted on the differential characteristics of pain and vomiting; epigastric pain in ulcer, right lateral pain in gall-stones; vomiting two or three hours after eating in the first disease; during the night without relation to the taking of food in the second. But these distinctions do not always occur and lithiasis may manifest itself by gastric symptoms. If there is a tumor which in form and location may be mistaken for a calculous gall-bladder the differential diagnosis becomes still more difficult.

This form of tumor may be encountered in ulcer with perigastritis as well as in cancer. Certain forms of cirrhosis not infrequently present the symptoms of lithiasis. Acute hepatomegalia of cardiac origin may be accompanied by pain which resembles that of gall-stones. There is a series of cases of chronic non-calculous cholecystitis that both in symptoms and physical signs resembles calculous cholecystitis.

There is another set of cases in which the symptoms and course are less deceptive but the error is caused by the presence of a tumor with the location and form of the gall-bladder. A large gall-bladder, hard and projecting, or at least something that closely resembles it, is found under the edge of the liver; there may have been pain, paroxysmal in nature and a little icterus, and a diagnosis of gall-stones is naturally made. But it may prove to be a paravesical hydatid cyst, sometimes calcified, or a gumma of the liver in the same location. Cancer of the liver may also have this location, and in that case there are various possibilities. There may be



a cancerous nodule which simulates a gall-bladder and a normal gall-bladder; or there may be cancerous nodule and also a gall-bladder containing calculi; or there may be a new-growth of the calculous gall-bladder itself which has been transmitted to the parenchyma.

All such cases are encountered; but a minute and often repeated palpation ought to discover in these tumors some anomaly in form or size which does not agree with that of the gall-bladder. They are

apt to be too large, too extensive. And at present the complement-fixation reaction and Wassermann reaction are valuable aids in differential diagnosis. If the observation is carried on for a sufficiently long time there will generally be some sign that will prove gall-stones if they really exist. There will be apt to be concretions in the stools, and examination of the faeces should be performed more generally and with more persistence than it usually is in the doubtful forms under discussion. J. DUMONT.

## SURGERY OF THE EXTREMITIES

### DISEASES OF THE BONES, JOINTS, MUSCLES, TENDONS. CONDITIONS COMMONLY FOUND IN THE EXTREMITIES

**Telford, E. D.: Leontiasis Ossea; a Report of a Case and a Review of the Literature.** *Med. Chronicle*, 1914, lix, 85. By Surg., Gynec. & Obst.

The author reviews the literature of the disease, commenting on the rarity of the condition (less than forty cases having been collected), and reports a typical case. He describes the disease as one of unknown etiology, beginning early in life as a bony enlargement of the orbital region with most marked changes showing in the upper jaw. The overlying soft parts are unaffected, and no subjective symptoms appear until the pressure of the enlarging bones causes cranial, orbital, or nasal symptoms. The disease progresses slowly, with occasional periods of rest or even retrogression, and terminates fatally from the pressure complications. Pathologically, the bones retain their normal contour, but show marked thickening. They are usually soft and porous, showing cavities filled with pink gelatinous material. Histological examinations show changes similar to those of osteitis deformans of Paget.

The treatment is palliative, operative relief of distressing pressure symptoms being the only measure used. DEFOREST P. WILLARD.

**Wenglowski, R.: Malignant Tumors of Bones; a New Method in Conservative Operative Treatment.** *Lancet*, Lond., 1914, clxxvi, 1391.

By Surg., Gynec. & Obst.

In malignant tumors of bone, to avoid resection of the affected area, Wenglowski sterilizes the bone to kill all the elements of the tumor and then allows the dead bone to remain in its natural connection with the healthy part of the bone so that no grafting is necessary. Steam under high pressure is used, secured from an ordinary autoclave or even a steam kettle, as steam in the latter is formed under a pressure of 3 to 5 atmospheres. A piece of thick-walled rubber tubing, one and one-half to two meters long, is attached to the spout of the kettle, and to the other end of the tube is connected a piece of metal tubing perforated for the escape of the steam. For sterilizing the front and side of the

bone the author uses a straight metal tube with terminal holes; for the under surface, a flat, slightly curved tube with holes on the concave side. The tumor in the soft parts is removed, then that adhering to the bone is scraped off and the bone laid bare as for a resection. The sterilization is then carried out, the soft parts being protected by four layers of gauze, upon which is placed a thin layer of sterilized asbestos and finally a metal plate; the latter is used to protect against any hot water which might leak through.

By experiment, Wenglowski determined that a temperature of 55° to 80° C. was necessary to kill the cells and bacteria. To secure this temperature in the tibia it is necessary to apply the steam for three minutes; for the lower jaw, one and one-half minutes; and for the condyles of the femur, eight minutes.

At the point of application, not only the surface near the steam reaches the desired temperature, but also the opposite side of the bone. But along the bone it was found that 2 cm. away the temperature was only 45° to 50° C., and at 3 cm. only 35° to 40° C.; so that the effect of the steam extends but about 2 cm. laterally. If the greater part of the bone is to be sterilized, it must be done bit by bit; but it is only necessary to apply the steam to one side of the bone (preferably the back), as the effect extends through to the opposite side as mentioned above.

FRANK D. DICKSON.

**Murphy, J. B.: Osteitis Fibrosa Cystica of Upper End of Femur.** *Surg. Clin. J. B. Murphy*, 1913, ii, No. 5. By Surg., Gynec. & Obst.

A male of 27 was admitted to the hospital on account of a deformity of the right thigh. When the patient was nine years old he fell while running and landed on both knees, striking harder on the right than on the left. He was confined to bed and had sharp shooting pains in the right thigh to the knee much of the time. After two weeks he was up and about, but continued to have some pain for the next two months. He did not have either chills or fever. When he was fourteen, he tried to jump, slipped and fell, one leg extending forward and the other backward. He was unable to rise, and was carried home. For the next two weeks he had acute pain, shooting



in character, extending down the right thigh to the knee. It gradually became less severe, and at the end of three months he was able to walk and after six months he was free from pain. The right leg seemed to be shorter, and there was a slight bowing outward at the junction of the middle and the upper third of the thigh, so he walked on the ball of the foot. From that time on the bowing gradually increased in degree, and after walking some little distance he had pain in the thigh. He wore an elevated shoe, which had to be increased in height from year to year on account of the shortening of the leg. The right leg was  $3\frac{1}{2}$  inches shorter than the left.

At operation, a great excavation of the upper end of the femur was found extending up into the base of the neck; this had on its outer side a compact bony shell; there were partitions through it separating it into many compartments or pockets; these consisted of compact bone; the wall of the cavity everywhere was compact bony tissue, thus differing from a malignant lesion. These cavities were thoroughly curetted from one end to the other; the middle portion of the canopy, about one-half inch wide, was removed so as to give access to the cavities; the medulla below was separated from the lower cavity by a compact bony tissue; a fragment of bone 6 inches long was removed from the crest of the tibia of the opposite leg, then implanted into the cavity, both ends being fixed under the bony shell, first by inserting the lower end into the cavity below and then grasping the transplant with forceps and carrying the upper end under the shell of the trochanter, so it was held firmly in position at both ends and did not need to be nailed; when that was completed, an involution was made of the muscles into the cavity down to the transplant; these were held in the cavity by stitches placed into the aponeurosis, an inch behind the line of division in front, and one-half inch behind the line of division behind, so there was a fairly good involution and a fairly good filling of the cavity down to the transplant; the periosteum of the transplant was turned outward. A Buck's extension with 25-pound weight attached was put on the leg.

The patient remained in bed, with the extension on his leg, for seven weeks. The wound healed per primam. The stitches were removed on the seventeenth day, when the first dressing was made. After seven weeks the patient was allowed up and around on crutches. He had neither pain nor discomfort in the leg.

**O'Reilly, A.: Joint Syphilis.** *Am. J. Orth. Surg.*, xi, 3, 431.  
By Surg., Gynec. & Obst.

Some of the early writings on syphilitic arthritis were by Petrus in 1488, and by Ferrus in 1537. The literature of the subject is now voluminous except in America, where it is scarce. This form of arthritis is more common than is suspected. It is claimed by Fournier that 39 per cent of all congenital syphilitics have arthritis, and by Von

Hippel, 52 per cent. The classification given by most authors divides the lesions into congenital and acquired, the latter being subdivided into (1) early secondary, (2) secondary, and (3) tertiary. In the early stage there is arthralgia, sometimes intense, often worse at night; motion painful, but only slightly limited. The second stage is one of chronic synovitis and hydrarthrosis. It may be multiple, but the knee is the most common site. In the tertiary stage a chronic serous synovitis may be present. A neighboring gumma of the bone may produce the joint symptoms. This stage may produce bone and joint changes which simulate arthritis deformans.

Of the arthritic lesions of hereditary syphilis there is no definite classification. Common forms which are described are: (1) symmetrical synovial effusion, without pain or loss of function; (2) osteochondritis resulting from bone involvement; (3) osteo-arthropathy of large joints with nocturnal pain and enlargement simulating tumor albus; and (4) chondro-arthritis in children aged about fourteen, a recurring synovitis with inflammation of the neighboring bone.

The pathology of the lesions of the secondary stage is not well known. In the tertiary stage, however, more frequent autopsies have shown that the most common lesion is of the synovial membrane; that there are gummata in the form of flat movable bodies, sometimes ulcerated; and that the bone ends are usually intact.

Two forms of gummatus joints are described, one synovial or capsular, the other beginning in the bone and extending into the joint. Nocturnal exacerbation of pain is the most valuable diagnostic sign. The diseases with which it is likely to be confused are tuberculosis, gonorrhoeal arthritis, and arthritis deformans. The Wassermann reaction should be considered as the determining factor. All agree that general antisiphilitic treatment is of the most value. The prognosis, under proper treatment, is said to be good. The author reports in detail 26 cases from the clinic of the Washington University Hospital, of which 18 were polyarticular, 12 were between 30 and 40 years of age, 20 gave positive Wassermann tests, 13 were men, and 13 were women. W. A. CLARK.

**Ely, L. W.: The Pathology of Tabetic Arthropathy; Preliminary Study of Two Cases.** *Am. J. Orth. Surg.*, xi, 3, 404.  
By Surg., Gynec. & Obst.

There are three views on the nature of the Charcot joints: (1) The lesion is an arthritis deformans modified by cord lesions; (2) it is the result of damage to the trophic nerve-centers in the cord; (3) it is a late syphilitic degeneration of the bone-marrow and synovia. Prominent features in the pathology are: fluid filling the articular cavity; change in shape of bone-ends from wearing away or fracture, leaving fragments free or attached; thickening of the synovia.

The first case showed disappearance of the con-



dyles and cartilage of the femur, change in shape of patella, semilunar cartilages, crucial ligaments, and inner side of the head of the tibia. Microscopically, the cartilage was seen to be replaced with fibrous tissue, as was also the marrow in some places. There was a marked productive osteitis in the tibia. The synovia was thickened and consisted largely of granulation tissue with hæmorrhages.

The second case showed destruction of the tibio-tarsal articulation with microscopic changes similar to the first case. No *treponema pallidum* were found in either case.

W. A. CLARK.

**Rothschild, M. A. and Thalhimer, W.: Experimental Arthritis in the Rabbit, Produced with *Streptococcus Mitis*.** *J. Experimental Med.*, 1914, xix, 444. By Surg., Gynec. & Obst.

The authors have succeeded in producing arthritis in 50 per cent of the rabbits injected with *streptococcus mitis*. The character of the arthritis is identical with that produced by *micrococcus rheumaticus*, and the exudate in and about the joints is of the same nature as that caused by *streptococcus rheumaticus*. The microorganisms can be demonstrated in a comparatively small percentage of cases. In smears, they are almost always found intracellularly; in cultures, they can be recovered in about one-third of the animals.

Arthritis produced by other types of streptococci differs by reason of greater destruction of tissue, by being more permanent in character, and by the exudate containing large numbers of polymorphonuclear leucocytes. The deduction of a distinct variety or species of streptococcus based upon the power to cause arthritis in rabbits is unwarranted.

C. H. BUCHOLZ.

**Roberts, P. W.: The Practical Management of Chronic Osteo-Arthritis.** *Med. Rec.*, 1914, lxxxv, 829. By Surg., Gynec. & Obst.

The author, while acknowledging the value of the research work which is being done with the purpose of clearing up the etiology of chronic arthritis and the development of specific remedies, contends that extreme refinement in diagnosis is not essential to favorable treatment.

For a working basis he suggests the division of chronic joint troubles into two classes: (1) those due to or following a demonstrable infection, and (2) those due to a vicious metabolism. He puts especial stress upon the effects of traumatism and points out the importance of the immobilization of such affected joints, observing that those joints which are easily put at rest undergo recession quickly, while those more difficult of fixation recover more slowly. Toxic and mechanical irritants act both locally and centrally, the latter affecting nutrition of the joint tissues through alteration of the secretions of the ductless glands.

In treating such cases, first the discernible foci of infection should be removed, local nutrition im-

proved, deformities that tend to put undue strain upon weight-bearing joints should be corrected, and, as far as possible, weight-bearing parts should be placed at rest.

He calls attention to the common fallacy of drug-ging these patients with antirheumatic remedies, such as alkalies, salicylates, and iodides, whose principal effect is to disturb digestion. He also cautions against restricting the diet too closely.

He has had a very satisfactory experience from the use of thymus gland substance in doses of 10 to 15 grains three times a day. Its action is slow and it should be continued for several months. Sometimes thyroid gland with the thymus is useful in cases where there has been rapid increase in weight. Recently he has used pituitary gland substance, a 1 to 2 per cent solution being injected intramuscularly, with striking lessening in pain and joint swelling.

In addition to these agents, he has found the d'Arsonval current, given for the local effect of the heat produced, to be of undoubted value. Rest is of primary importance, and the necessary orthopedic treatment should be instituted as needed for each particular case. He reports eleven cases treated along these lines.

H. W. WILCOX.

**Werndorff, R.: The Treatment of Tubercular Coxitis.** *Am. J. Orth. Surg.*, xi, 3, 367.

By Surg., Gynec. & Obst.

The author calls attention to the fact that while in America the treatment of tubercular hip disease is still unsettled, there is no longer any question at the Lorenz clinic in Vienna that ankylosing therapy is the most desirable. The redressment of the old healed tubercular hip by intra-articular operation causes, in many cases, a recurrence of the active process. Rather than correct an adduction deformity by intra-articular redressment, the author advises subtrochanteric osteotomy. The adduction deformity is the result of two things: The destruction in the joint causes a rise of the trochanter above the Nelaton line, thereby causing a relative lengthening of the pelviotrochanteric muscles; in addition, these muscles are insufficient also as a result of atrophy. The combination of these two conditions causes a dropping of the pelvis to the unsupported side when the body weight is supported on the affected leg alone, so that the pelvioletrochanteric angle is less than 90 degrees instead of more than 90 degrees, as it is when standing on the normal leg alone.

It was observed that patients of the remote Alpine regions who recovered from coxitis without treatment had ankylosed hips, but they had only a little atrophy and a strong, functionally good leg with no sensitiveness; on the other hand, in those cases which have been protected by extension, the leg is functionally unfit, atrophic, easily tired, and, although in better position than the ankylosed cases as long as apparatus is worn, quickly develops the inevitable adduction deformity when use of the leg is begun without apparatus. At the Lorenz clinic the



hip is fixed in a spica, which allows weight-bearing but not motion and makes it possible to keep the patient up and about during almost all of his illness. It is not intended by this treatment to press the bones against each other, but to render the joint relatively painless by fixation, and, above all else, to obtain a firm union between the joint surfaces.

W. A. CLARK.

**Sever, J. W. and Fiske, E. W.: Tuberculosis of the Knee-Joint in Children.** *Tr. Am. Orth. Ass.*, Phila., 1914, June. By Surg., Gynec. & Obst.

This paper is the report of a study of 638 cases of tuberculosis of the knee admitted to the Children's Hospital, Boston, from 1880 to 1910, consisting of the statistics of these cases and the conclusions derived therefrom.

Briefly, it was found that males predominated, that right and left knees were equally affected, that trauma occurred in 30 per cent, and tuberculous family history in 13.5 per cent. Involvement of other joints was found in 11.3 per cent in the order of hip, spine, ankle, elbow, and wrist. The predominance of symptoms was in the order of swelling, limitation of motion, flexion, heat, pain, subluxation, abscess, sinus, fluid, knock-knee, and outward rotation. Abscess was found in 27 per cent of all cases.

The question of primary osteal or synovial disease could not be determined definitely, but from a study of the joints opened at operation, and the X-rays taken, it was certain that the bone was eventually affected in all cases in children, synovial disease being frequently found with it. Disease of the tibia alone was rare, involvement of the femur and tibia together was commonest, of the femur alone next. Bony enlargement was commonest in the femur alone, and in the internal condyle. The treatment of these cases was by traction, plaster, splint, and operation. Thirty-five per cent were operated upon, the relative frequency of the operations being forcible correction, incision and drainage, arthrectomy, osteotomy, tenotomy, excision, orthoplasty, aspiration, and amputation. The first four had to be repeated in many instances.

The average duration of treatment was 4.9 years, cases not operated upon averaging 4.2 years, those operated upon averaging 5.8 years. The results of treatment of 251 of these cases, of three or more years' duration of treatment, show that about 65 per cent had satisfactory results, 35 per cent unsatisfactory, the oldest cases showing the best results, healing and ankylosis increasing with duration. Although the cases operated upon undoubtedly represent the severest types, it is significant that much better results were obtained in the non-operated cases, one-quarter of the latter as compared with one-half of the former having undesirable results.

Forcible correction and excision were the only operations in which more favorable than unfavorable results were recorded. Outside of the few probably

favorable cases which received splint treatment only, the best results in the non-operated group were obtained by the combined splint and plaster treatment, if the healed cases be taken as a criterion, otherwise there is little choice in the selection of treatment. The results of those cases which were in the worst condition at admission, as represented by the groups which were put on traction or had abscesses, compare unfavorably with the general average, showing a predominance of unsatisfactory results and many unhealed cases. The results of those cases of abscess not operated are, however, far better than those which were opened, agreeing with the general results of the operated and non-operated cases.

**Gramenitzky, T.: Treatment of Gonorrhœal Joint Diseases, with Special Reference to Serum and Vaccine Treatment** (Über die Behandlung der gonorrhoeischen Gelenkerkrankungen unter besonderer Berücksichtigung der Sero- und Vaccino-therapie). *Beitr. z. klin. Chir.*, 1914, lxxix, 404.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author reviews the previous methods of treatment of gonorrhœal arthritis, and their results. The results were by no means uniform. Since 1907 treatment by immunization has been in use. In the past two years the author himself has treated 95 cases of gonorrhœal arthritis, 75 in man and 20 in women. The knee-joint was most frequently involved, 55 times in all, the ankle in 28 cases and the wrist in 15, several joints in 12 cases, and in 3 cases the tendon sheaths. The exudate was serous, serofibrous, and seropurulent. In 40 cases gonococci could be demonstrated only in the urethra and vagina, in 23 cases in the joints also, and in 32 cases they could not be demonstrated at all.

The treatment consisted in active and passive hyperæmia, alone and in combination; gonococcus vaccine and antigonococcus serum, alone and combined; and immunization combined with hyperæmia. The latter combination gave the best results: 70.9 per cent recoveries and 29.1 per cent improvements, without ankylosis. By recovery he means complete restoration of function, and by improvement a certain limitation of movement but no pain. All three cases of tendovaginitis were cured. Immunization had a particularly good effect on acute joint inflammations. Active hyperæmia was generally not well borne in these cases, so the passive form was given the preference. The situation was reversed in chronic processes.

The dose of serum was 2.0 (1 ampulla). One-hundred mill. units were contained in each cubic centimeter of the vaccine and it was given in doses increasing from 0.3 to 1.0. Among 45 cases there was a local reaction in 18 and a general reaction in 7. In two cases there was transitory albuminuria and uræmia, and in one case where there was a tubercular infiltration of the lungs there was hæmoptysis. The author has seen marked improvement from his combination treatment by immunization and hyperæmia, even in old chronic



cases. The effect of injections of serum or vaccine on urethritis is very slight.

SCHULTZE.

**Brown, W. L. and Brown, C. P.: Technique for Arthroplasty of the Shoulder-Joint.** *J. Am. M. Ass.*, 1914, lxii, 1389. By Surg., Gynec. & Obst.

This technique was first worked out on a cadaver and then applied to a clinical case. The case was that of a carpenter, aged 44, who suffered from a stiff shoulder following a suppurative condition in the joint. The results of the operation were very satisfactory, as mobility of the arm was restored.

In this operation a portion of the short head of the biceps, four and one-half inches long, is utilized for a flap to interpose, because it is covered by a more dense tendinous sheath than any other structure in the neighborhood and is correctly located anatomically to line the glenoid fossa and cover the entire head of the humerus.

EUGENE CARY.

**Von Schatteburg, K. C.: Multiple Tumor Formation in the Region of the Wrist-Joint** (Über multiple Tumorbildungen in der Gegend des Handgelenkes). *Dissertation*, München, 1913. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Cavernous angiomas are discussed, with special reference to their ordinary localization and their coexistence with other kinds of tumors. In the case described a small tumor had appeared 12 years before on the right thumb. There was profuse sweating at its site, and sensitiveness to pressure. The tumor was removed in part. On admission to the hospital numerous tumors were found on the radial side of the right forearm and the palm of the right hand, some of them soft, and some of them, especially on the thenar eminence, hard. They were not especially painful on pressure. The skin over the tumors was bluish. The radial side of the right wrist, the thenar eminence, and the thumb perspired profusely. The glands of the region were not enlarged.

On operation tumors were found on the tendon sheaths of the flexor carpi radialis, flexor pollicis longus, and abductor pollicis longus. They were freely exposed and removed. One, which penetrated very deeply was located on the capsule of the wrist-joint; one was firmly adherent to a nerve. The tumors and the surrounding tissues were very vascular, and on the flexor side of the right forearm, above the wrist-joint, there were varicose veins. The skin here was moist also on the radial side, a similar occurrence having been recorded only once in the literature. The ulnar side was almost dry. The right thenar eminence was somewhat atrophic. More tumors could be felt on the surface of the hand above the tendon of the flexor carpi radialis. A very vascular tumor as large as a pea, which was certainly a recurrence, was found at the boundary between the distal and second phalanx of the right thumb. The glands were not enlarged. Some of the tumors were cavernous angiomas, others neurofibromata.

Fritz LOEB.

**Grant, T. P. and Stewart, M. J.: On Myeloid Tumors of Tendon Sheaths, with Report of a Case.** *Glasgow M. J.*, 1914, lxxxi, 333.

By Surg., Gynec. & Obst.

Sarcomata of the tendon sheaths are found most commonly between the years of 15 and 40. Trauma probably plays an important rôle, inasmuch as the hands are most commonly affected,—87 per cent of true myeloid tumors occurring on the hands and most of these on flexor tendons.

The myeloid type remains more localized and varies in shape according to surrounding structures, while spindle- and round-celled tumors are more apt to spread. The chief early diagnostic features are slow-growing, painless, freely movable masses under the skin, with little interference to tendon motion. Microscopic examination, however, is always required for exact diagnosis.

As to treatment, Tourneux's conclusions, from which the above data are taken, are: (1) Local removal without interference of the tendon, if it is an early growth, especially if myeloid; (2) wide dissection or amputation if round-celled and extensively infiltrated; (3) amputation if recurrence takes place, no matter what kind of growth it is.

The author reports a case of tumor, following puncture of the finger by a knitting needle, which was shelled out, but recurred twenty months later, requiring amputation. The tumor removed was yellowish in color and soiled throughout. The histology is discussed and a term suggested by Bellamy, "myeloid endothelioma," applied.

H. W. MEYERDING.

## FRACTURES AND DISLOCATIONS

**Murphy, J. B.: Fractures in the Neighborhood of Joints.** *J.-Lancet*, 1914, xxxiv, 261.

By Surg., Gynec. & Obst.

The author calls attention to the frequency of Volkmann's contraction following a too tight bandage on the forearm in the treatment of fractures. The mischief is done in the first forty-eight hours and the forearm may be permanently ruined. To avoid this, padding four inches thick should be put on between the wrist and the elbow and instructions left that the bandage is to be cut if the hand swells.

For fracture of the condyles the arm should be put up in full flexion and not disturbed for passive motion for two and a half weeks for children, three weeks for adults. Passive motion too early, when it causes pain, produces laceration and results in extensive cicatricial formation with a consequent ankylosis or a limitation of motion. The best way to secure a good position after condylar fracture is by nailing, on the fourth or fifth day. The bone is so superficial that only a small incision is necessary. An eight- or ten-penny nail should be used. This prevents the friction which produces callus, and "the less the amount of callus the less the likelihood of production of ankylosis." After thus nailing, the arm may be put in a sling with no other dress-



ing. For fracture of the olecranon, a single nail at the proper angle is better than plating or wiring. The author reports a variety of cases of fracture at the elbow. In one case he resected part of an anteriorly displaced upper fragment of a supracondylar fracture to allow flexion of the forearm. In another case he brought the lower fragment forward and fastened it with a Lane plate to restore mobility. In another, he detached a displaced condyle completely and nailed it back in proper place with a good result.

For fracture of the humerus near its head, the fragments should be adjusted by open operation and nailed in position. In some cases the head had to be taken out, reinserted and nailed in good position. In Pott's fracture there is a crowding of the astragalus upward between the malleoli. To prevent this position becoming permanent, the foot should be put up in extreme adduction—if the fracture is above the articular surface of the tibia—and kept there for at least six weeks to permit healing of the ruptured interosseous ligaments. Impacted fractures of the upper end of the tibia are usually called sprains and overlooked. Fractures near the hip-joint usually require nailing. In one case the head was found detached and dead but was nailed in place and showed a good result four years later. If there is a fracture of the neck of the femur, there should be 25 to 35 pounds extension with superlative abduction of both legs.

W. A. CLARK.

**Erving, W. G.: Diagnosis and Treatment of Joint Fractures.** *Virg. M. Semi-Month.*, 1914, xix, 86.

By Surg., Gynec. & Obst.

Joint fractures are exaggerated sprains, and, by use of the X-ray, many more cases are now being recognized as fracture sprains. The hæmorrhages, etc., following, and the absorption of the fibrinous elements, if undisturbed, tend to limit joint and muscular function. In sprained joints, support without interference of normal function is now accepted in preference to complete immobilization and disuse.

With joint fracture and joint sprain, replacement of the fragments, immobilization for the shortest possible time, and active mobilization to prevent adhesions, constitute the treatment.

The author emphasizes the value of X-ray examination. A temporary adjustment and splint may be used, and three days later, under possible improved conditions, a nitrous oxide or an ether anæsthetic is given and a better reduction performed; the joint is manipulated to clear the articulation of bony spicules and put it in a position of greatest value in case of fixation. If possible, neighboring joints should be left free, as stiffness commonly results from too complete fixation.

Plaster of Paris, split and well padded, is preferred as splint material because of its adaptability and lightness. From four to five weeks in Colle's, and six to eight weeks for Pott's fracture is no longer to be considered; and to continue immobiliza-

tion longer than seven to ten days invites stiffening.

Hot air, massage, dressings of hot cloths, and baths are recommended. Manipulation under anæsthetic should be given at the end of a month. Weight-bearing in ankle fractures cannot be borne under five weeks at the earliest.

H. W. MEYERDING.

**Fiévez, J.: Intracapsular Rupture of the Long Head of the Biceps; Its Relation to Arthritis of the Shoulder-Joint** (La rupture intra-capsulaire du tendon du long biceps brachial; ses rapports avec l'arthrite sèche scapulo-humérale). *Arch. gén. de chir.*, Par., 1914, 129.

By Journal de Chirurgie.

This accident generally follows traumatism due to lifting a heavy load; there is a cracking sound, severe pain, and loss of function followed by ecchymosis of the anterior surface of the arm. It is characterized by (1) a swelling of the long head of the biceps; (2) the tendon can be felt to an abnormal degree under the anterior edge of the deltoid; (3) the tendon is placed more or less under tension when the biceps contracts.

Fiévez maintains that this symptom-complex is produced only by intracapsular rupture of the tendon, not by elongation of the tendon, inward dislocation, or pseudohernia of the muscle. He believes it is a relatively frequent affection. He found it once in 45 examinations of hospital patients, and in the dissecting room once out of ten arms dissected. Besides the acute surgical form there is a chronic medical form in conjunction with arthritis without effusion of the articulation between the scapula and humerus. He reports four cases.

The rupture is progressive, the process of destruction passing through various stages. The joint is severely involved: there is arthritis without effusion, ecchondroses, osteophytes, and villousities within the joint. The localization of the arthritis determines the seat of the lesion in the tendon; later, after the tendon has ruptured, the arthritis continues its work of destruction. The rupture of the long head of the biceps is one of the results of arthritis. This process is not confined to the shoulder-joint, but may be observed in other joints.

It is important to know the part played by arthritis of the shoulder-joint in rupture of the tendon when passing judgment on loss of function following industrial accidents. Fiévez concludes that from the medicolegal point of view there are three possibilities: (1) The traumatism is the sole cause of the rupture. (2) The traumatism is insignificant and the arthritis is the sole cause of the rupture. (3) Traumatism and arthritis have acted together to produce the lesion. But if it can be shown that up to the time of the accident the injured man could perform all his work and that after the accident he could not work, the judgment will be apt to be in his favor.

In conclusion, the author brings up the question of whether abnormal insertions of the long head of



the biceps are congenital lesions or malformations due to intracapsular rupture. The treatment is surgical only in exceptional cases. The thing to be treated is the arthritis, which is the cause of the rupture and the pain.

BERNARD DESPLAS.

**Ridlon, J.: Spontaneous Dislocation of the Hip.**

*Tr. Am. Orth. Ass., Phila., 1914, June.*

By Surg., Gynec. & Obst.

This paper is an argument for the use of the term "spontaneous dislocation" for that of "congenital dislocation," which has been used up to this time.

Some femoral heads may never have been in their sockets; some may have slipped out before birth, and others at birth; but it is a known fact that some appear to be out at birth, and later on become secure and in place; others slip out after birth and before the child walks; others remain in place until the child has walked for some time, and then go out without recognized traumatism as late as the fourteenth year.

Cases were reported and lantern slides from radiograms shown illustrating these facts; also slides were shown illustrating the case of a man, 54 years old, who had never had any trouble with his hips, but whose sockets were so shallow that they embraced not more than two-thirds of the femoral heads.

**SURGERY OF THE BONES, JOINTS, ETC.**

**Thomas, H. B.: Bone-Transplant.** *Surg., Gynec. & Obst., 1914, xviii, 580.*

By Surg., Gynec. & Obst.

The author advocates the use of bone supports taken from the patient, where possible. The Lane plate is thought to cause irritation and a tendency toward suppuration very frequently, regardless of the Lane technique. The per cent of unsuccessful cases is taken from one hospital only and is much higher than a general study of several hospitals would probably show. Some of the uses now made of auto bone-plate are enumerated, among them being:

1. To plate fractures in long bones, thereby diminishing the possibility of suppuration and a second operation, in comparison with the Lane plate.
2. To supply congenital deficiency in long bones.
3. To retain corrected or near-corrected position in scoliotic spines.
4. To replace resected tubercular joints.
5. To hold the overcorrected talipes equino varus foot in position by placing a wedge of bone, taken from the tibia, in the groove made by the overcorrection and by hip pegging, as suggested by Albee.
6. To supply loss of bone following osteomyelitis.
7. To replace joints resected for cyst or malignancy, using strips of tibia taken from the same patient, as in Halstead's shoulder case, not yet reported.

Only cases under the headings 1, 2, 3, and 4 are considered. A case of auto bone-plate is men-

tioned, with the opinion that the use of the bone-plate will tend to displace the use of the steel-plate.

The replacement of a congenitally absent metacarpal, and the replacement of twelve inches of resected knee-joint with ten inches of the patient's tibia placed in tuberculous material, are reported.

**Allen, H. R.: External Bone-Plating; Preliminary Report.** *J. Indiana St. M. Ass., 1914, vii, 206.*

By Surg., Gynec. & Obst.

Under this title the author describes his technique in the operative treatment of fractures, which, in brief, consists of an external plate made of a low melting alloy composed of a combination of metals. This alloy, melted over warm water, is poured into a trough composed of rubber tubing or forms of any convenient material, into which pass the external ends of the nails which penetrate the bone fragments. The nails pass entirely through the bone and are placed at diverging angles to each other.

He claims for his method better fixation than with other well-known methods of external fixation, with absence of pain and infection. He never uses plaster of Paris for splints, but makes his splints of wire and adhesive plaster.

H. W. WILCOX.

**Albee, F. H.: The Inlay Bone-Graft in Fresh Fractures.** *N. Y. M. J., 1914, xcix, 1020.*

By Surg., Gynec. & Obst.

Albee considers that the results of inlay bone-grafting in old ununited fractures have been so good that the same methods applied to fresh fractures should be equally successful.

He obtains the graft used from the fractured bone, instead of from the crest of the tibia, by making the segment removed from one fragment twice the length of that removed from the other, if possible five and one-half inches for the long and two and one-half inches for the short segment. With a sharp instrument the periosteum is stripped from the area from which the short segment is to be removed to insure the removal of the osteogenetic cells and the gutter started by twin saws adjusted to cut the desired width. The long segment is outlined in the same manner, but the periosteum is removed from only the distal half of the segment. The parallel saw-cuts are continued to the medullary cavity by a single saw held at such an angle as to cause the saw-cuts to converge as the cavity is approached, thus preventing the graft from dropping into the medullary cavity when forced into place.

The breadth of the saw-cuts is sufficient to allow the graft, when placed in position, to sink below the level of the gutter, and, in the margin so left, dowel holes are drilled, obliquely outward, into which dowels made from the split-up short segment are driven; in this way the inlay is held firmly in place. The stripped-back periosteum above and below is drawn over and sutured, the unfilled part of the gutter being left to fill up with new bone. The soft parts are closed in the usual manner and a plaster of Paris dressing applied.

FRANK D. DICKSON.



**Brunetti, C.: Bone-Grafts** (Les greffes osseuses). *Gaz. clin.*, 1914, xii, 31. By Journal de Chirurgie.

The author describes the case of a man of 73 with a sarcoma of the humerus. The humerus was resected; then a fragment of the fibula 15 cm. long was removed, the periosteum being preserved as well as possible; the two extremities were pointed and introduced into the ends of the humerus. There was no suture of the bone. Drainage was established and the shoulder and elbow immobilized. Radiography a month later showed the graft to be normal. Two weeks after this, while the arm was being massaged, the lower end of the graft became detached from the humerus and a second operation had to be performed to fix it in place. At this time the periosteum was found normal and the fibula was adherent to the neighboring muscles. Four months later the patient was using his arm normally with only a slight decrease in muscular force.

This case seems to justify the belief that the transplanted fragment continues to live,—an opinion that is at present disbelieved by the majority of authors. P. DE RIO BRANCO.

**Gallie, W. E. and Robertson, D. E.: The History of a Bone-Graft.** *Tr. Am. Orth. Ass.*, Phila., 1914, June. By Surg., Gynec. & Obst.

This paper consists of a report of experiments on animals, conducted with a view to determining the successive histological changes which occur in bone-transplants. Pieces of bone an inch and a half long were removed from the radii of dogs and carefully replaced and held in position by stitching the periosteum over them with fine catgut. The specimens were recovered at the end of one, two, three, and eight weeks.

At the end of one week microscopical examination showed that the graft was quite dead, there being no circulation present and no living cells.

At the end of two weeks the circulation showed signs of being reestablished by the growth of new blood-vessels into the cracks and open haversian canals; and along the edges, wherever a haversian canal was cut transversely, it was seen to contain new blood-vessels. The lacunæ were empty.

At the end of three weeks the circulation was completely reestablished and the graft firmly united to the rest of the radius by new-formed bone. Everywhere around the outskirts could be seen proliferating osteoblasts which were invading the graft, spreading into the cracks and open haversian canals along the new-formed blood-vessels. In many places these osteoblasts were laying down new bone. Along the edges, wherever haversian canals were cut transversely, they were seen to contain blood-vessels, surrounded by osteoblasts and new bone. Elsewhere the graft was devoid of cells as in the one- and two-week specimens. Wherever invaded by osteoblasts the graft was becoming cancellous.

At the end of eight weeks the graft was cancellous throughout, there being very little dead bone left,

its place having been taken by trabeculæ of new bone laid down by the invading osteoblasts.

In another experiment, before the graft was replaced, half of it was completely enveloped in tin foil. The specimen was recovered at the end of eight weeks and sectioned longitudinally. In the tip of the foil-covered extremity the bone was quite dead and as solid as when placed there, although the circulation had been completely reestablished. Nearer the middle the same picture appeared as in the three-weeks' graft described, namely, invasion with osteoblasts and the laying down of new bone. At the uncovered end the picture exactly resembled the eight-weeks' graft in being cancellous and made up entirely of new-formed trabeculæ. Thus this specimen showed all stages of the history of a bone-graft.

In another series of experiments the grafts were boiled for five minutes before being put into position. The sections showed exactly the same series of changes as described above in the unboiled grafts. In a third series, heterogenous grafts were employed and again the same series of changes were demonstrated. In all cases the grafts were solidly united to the dog's radius and the rapidity of replacement by new bone appeared to depend solely upon the relative hardness of the graft.

These experiments demonstrate that following this successful transplantation of small bone-grafts the following changes occur:

1. Death of the graft.
2. Revascularization of the graft.
3. Concomitant absorption of the dead bone and production of new bone by bone-cells which invade the graft along the route of the new blood-vessels.

These experiments show no difference in the value of fresh and boiled bone as transplants, and no difference in the gross and histological changes, incident upon the introduction of autogenous and heterogenous bone-grafts of similar density.

**Brougham, E. J. and Ecke, A. C.: Preliminary Report on the Treatment of Fractures by Fixation with Animal Bone-Plate and Bone-Screws.** *Surg., Gynec. & Obst.*, 1914, xviii, 637.

By Surg., Gynec. & Obst.

The authors report successful cases of fixation of fractures with absorbable bone-plates and bone-screws. The fixation was secure and efficient in all cases, and perfect union with abundant callus formation resulted. It was found in non-union, when plated with the device, that callus formation was stimulated and not retarded.

The device and special instruments for the plating make a mechanically simple operation. The technique of operation is that of Lane. The bone used for making the plates and screws is obtained from government-inspected cattle. The material is deprived of its animal matter and bleached, and the plates are made as thin as is consistent with strength.

The plates, which are five in number, constitute



the working set, each one being designated by a number: No. 1 the smallest, No. V the largest.

The holes in the plates are previously drilled and threaded. The plates are scrubbed with brush, soap, and water, sterilized by boiling for two hours, and placed in formalized alcohol. Before being used they are placed in normal salt solution, from which they are taken at operation.

In operating, the fracture is exposed and the bone-plate selected is placed over the fractured ends and held there by the pressure of long forceps in the hands of an assistant. The operator proceeds to drill the underlying bone, beginning at the hole at one end of the plate. The hole drilled is threaded with tap, and the bone-screw mounted in the holding-chuck is screwed into place, securing one end of the bone-plate.

The other end is treated likewise, then the intermediate holes. The projecting ends of bone-screws may be sawed off with a metacarpal saw, or the special bone clipper may be used.

The wound is closed, dressings are applied, and fixation is reinforced by the application of a plaster cast. The cast is fenestrated in twelve days, the sutures are removed, and the cast is strengthened if needed. It remains in place eight weeks and is then removed; in normal cases it is not reapplied.

**Benjamin, A. E.:** *The Operative Treatment of Fractures, Demonstrating the Use of Steel-Plates for the Correction of Bad Fractures.* *J.-Lancet*, 1914, xxxiv, 270. By Surg., Gynec. & Obst.

The imperfect and sometimes disastrous results following attempts at bone-plating may be due to the improper application of splints, selection of the wrong plate, screws too small for the drilled holes, soft bone, impaired vitality, or infection. The author reports fourteen cases of fracture which he treated by open operation. He used Lane plates in eight of these; in four, the plates were subsequently removed; in two, he reports sinus formation persisting several months.

W. A. CLARK.

**Reynaldo dos Santos:** *Operative Treatment of Simple Fractures* (Traitement opératoire des fractures fermées). *Med. contemp.*, Lisbon, 1914, xvii, 99. By Journal de Chirurgie.

During the past two years Reynaldo dos Santos has operated on 30 simple fractures, applying either simple screws, or screws with plates, or simply reducing the fracture through the incision. He has used Lane's plates in fractures of the humerus, the elbow, the femur, the diaphyses of the tibia and fibula, the malleoli, etc.

Among the cases there were two especially interesting ones. In one there was separation of the anterior tuberosity of the tibia by sudden muscular contraction in a young man. The patella was pulled upward and the fragment of the tuberosity pushed down. The operation consisted in replacing the fragment with the aid of two plates. This severe

articular fracture recovered completely with perfect functional results.

The second case was that of a man of 50 who had an oblique fracture of both bones of the left leg, with shortening, pronounced oedema, and glycosuria.

The author saw the patient one and one-half months after the fracture, which had been treated by immobilization. Examination showed torsion of the leg, very defective coaptation, no callus, complete loss of function, pain, and glycosuria. Under novocaine anaesthesia one of the extremities of one of the fragments of the tibia was resected, which did away with the overlapping, but left a gap between the fragments, which was filled in with a piece of bone removed from one of the resected fragments. Healing was by first intention. Thirty days later there was a well-defined callus and, at the end of 50 days, fixation and consolidation were complete.

The author emphasizes the good result in such a seemingly hopeless case. He insists on rigorous asepsis and no sutures. Haemostasis is accomplished by crushing the vessels; the muscles and aponeuroses heal without suture; and the skin wound is held together by clamps. The limb is immobilized for 12 to 13 days with metallic splints, followed by massage and mobilization.

P. DE RIO-BRANCO.

**Soule, R. E.:** *A Further Consideration of Arthrodesis in the Treatment of Paralytic and Other Acquired Deformities of the Foot.* *Tr. Am. Orth. Ass.*, Phila., 1914, June.

By Surg., Gynec. & Obst.

In cases of permanent paralytic valgus of the foot, in rigid and relapsing flat-foot, the astragalus furnishes a secure anchorage for arthrodesing the astragaloscaphoid articulation after the deformity is corrected.

The astragalotibia articulation is a broad, ovoid, hinged joint, and, being nearly horizontal, gives a broad weight-bearing surface, whereas the astragaloscaphoid articulation, being a ball and socket joint and placed as it is so that the articulation is almost perpendicular, the strain of weight-bearing and muscle action produces the maximum of deformity at this point. The astragalus remains in a normal relation to the tibia and fibula. Thus ankylosis produced at the astragaloscaphoid joint gives a stable, non-relapsing foot, without the loss of any necessary joint and without material mutilation to the foot. The muscle power already present is preserved and given an opportunity to develop.

Through an incision about one and one-half inches long, parallel to and to one side of the tendon of the anterior tibial muscle, the joint is exposed, and, with a curved gouge, made to conform to the ovals of the joints; the cartilages are removed from the head of the astragalus and scaphoid articulation. Correction of the foot forces the denuded surfaces together, where they are held by a closely fitting plaster of Paris cast for six weeks.



## ORTHOPEDICS IN GENERAL

**Marshall, H. W. and Langnecker, H. L.:** Some Hygienic Tests Applied to Orthopedic Conditions. *Boston M. & Surg. J.*, 1914, clxx, 752.  
By Surg., Gynec. & Obst.

The object of the author was to provide a good basis for the recording and study of the many difficult cases of arthritis which come to the orthopedic surgeon. He gives a chart whose base line marks the normal average of such indices as height, weight, blood-pressure, hæmoglobin, amount of urine, amount of food, reflexes, etc. Variations from this normal average line in an individual case are graphically shown by plotting a curve which goes above and below the normal base line in direct proportion as the indices in the individual being studied vary.

The chart should be very useful in keeping the attention of the patient and physician on the abnormalities and in showing clearly the improvement resulting from treatment. **FREDERICK C. KIDNER.**

**Bingham, A. H.:** Orthopedics in General Practice. *North Am. J. Homœop.*, 1914, xxix, 281.  
By Surg., Gynec. & Obst.

Bingham emphasizes the fact that orthopedic conditions are first seen by the general practitioner, and that he should be able to recognize the conditions and institute proper treatment. Favorable prognosis in orthopedics depends upon such early diagnosis and treatment.

The various conditions which the general practitioner should recognize, and which will result in severe deformity if not treated early, are briefly discussed.

Weak-foot with its vague aches and pains of the foot and leg, and with pronation of the foot but no flattening of the arch, should be treated with exercises to strengthen the tibials, and with proper shoes. Acute cramplike pains in the anterior part of the foot, due to the breaking down of the transverse arch, can often be cured by a felt pad under the heads of the third and fourth metatarsals.

Special mention is made of the necessity of a thorough examination of the whole body and of exercises for the correction of postural habits and the strengthening of muscles.

Rickets is another condition which yields quickly to early treatment and which will produce marked bony deformities if neglected.

Poliomyelitis, also, is first seen by the general practitioner, and much of the deformity and after-treatment can be prevented if the body and limbs are held in proper position during the early stages by splints, etc. Heat, massage, and electricity are useful in stimulating the paralyzed muscles.

Joint tuberculosis should always be suspected if a child limps and complains of more or less persistent joint pain. The prognosis is in direct relation to the early beginning of treatment.

DEFOREST P. WILLARD.

**Lovett, R. W.:** The Causes and Treatment of Chronic Backache, with a Consideration of the Diagnosis of Sacro-Iliac "Relaxation." *J. Am. M. Ass.*, 1914, lxii, 1615. By Surg., Gynec. & Obst.

Chronic lameness in the back is usually attributed by the laity to either kidney disease or to uterine troubles. Considering fundamental facts, it must be remembered that the condition has to do with a jointed, weight-bearing upright column, maintained in balance by muscular effort; that the load is mostly anterior; that the sacro-iliac joint which transmits the weight to the pelvis and thence to the legs is only very slightly movable, more so in woman than man, and in front of it lies the lumbosacral cord and plexus; that the spinal column is a structure of about one hundred articulations with intricate ligaments stronger on the posterior than on the anterior side.

Classifying on an etiologic basis, three varieties of backache can be clinically identified, viz.: (1) The chronic ache which may be due to a forward bent position which the patient habitually assumes to relieve displaced and tender pelvic organs. (2) Traumatism, resulting in chronic irritability. (3) Arthritis of the spine. In addition to these there is a large percentage of unclassified cases relative to the cause of which there is difference of opinion. Two theories are held: that of the static origin, assuming that there is a forward displacement of the center of gravity imposing undue strain on the posterior musculature of the trunk; and that of sacro-iliac strain or sacro-iliac relaxation. As to the latter theory, it is of such a nature as to admit of definite proof or refutation by röntgenoscopy or autopsy and no such evidence is available to establish such a condition as a clinical entity. The therapeutic measures employed by the adherents to this theory, such as straps of adhesive plaster on the movable skin with the idea of "immobilizing" the joint and preventing the bones sliding by each other, are in themselves, if they give relief, evidence that no such condition exists. For it is not to be believed that such strapping, even with encircling webbing or plaster of Paris, will permit a sliding thrust of 75 to 125 pounds at every step.

The static theory, on the other hand, cannot be proved or disproved by röntgen ray or pathology. The symptoms fit this theory and, moreover, the strapping advocated by adherents of the sacro-iliac theory could easily afford relief to the static cases by acting as an annular ligament to the gluteal muscles. These static cases are due either to lateral or anteroposterior defective balance.

In an analysis of eighty-three private cases the author classifies them as follows: Lateral defect in balance 10, anteroposterior balance 31, pelvic 6, traumatic 20, arthritis 15, acute lumbago—too acute to classify.

Treatment of the pelvic cases usually means gynecological operation, but it is wise to attempt mechanical measures first. Those due to arthritis of the spine require fixation of the spine and this is



best done by means of a canvas or leather corset reinforced proportionately to the severity of the case. Traumatic cases also require fixation. For lateral defect in balance the pelvis should be leveled by building up the sole and heel of the shoe on the proper side. In cases with defective antero-posterior balance, an effort should be made to throw the center of gravity backward. This is done by raising the heels of the shoes and by means of the therapeutic corset. This corset should be tightest around the pelvis at the bottom, diminishing in pressure towards the top where it should be loose, making no pressure on the back at this point, and it should have a straight front.

W. A. CLARK.

**Pollock, H. C.: Some Common Facial Deformities, from an Orthodontic Standpoint.** *Interst. M. J.*, 1914, xxi, 576. By Surg., Gynec. & Obst.

The author describes deformities caused by malformed jaws and teeth, such as "squirrel mouth" and undershot jaws, and states that they can be absolutely cured. This is brought about by an apparatus made up of small platinum springs, adjusted to the mouth by means of the teeth and made to exert slow, gentle pressure. This causes the tissues to respond and grow in the direction in which the pressure is applied.

Pollock shows photographs of 4 such cases before and after treatment, lasting from one to two years, with perfect results.

EUGENE CARY.

**Roth, P. B.: A Case of Congenital Defect of the Ulna.** *Lancet*, Lond., 1914, clxxxvi, 1457.

By Surg., Gynec. & Obst.

The author's case, a girl of 7 years, showed an absence of the lower two-thirds of the ulna together with three digits, a dislocation forward and upward of the upper end of the bowed radius on the humerus. Two digits, the thumb and little finger, were present. The hand consisted of the thenar and hypothenar eminences and was deflected ulna-ward to a right angle. The left humerus was one inch shorter than its fellow.

The elbow seemed to have good power and motion; the hand could be supinated, but from full supination only 90° of pronation was possible, possibly due to the curved radius. There was about normal wrist and finger motion.

Kümmel's classification is given and reference made to Wierzejewski's paper in 1910 when only 22 cases of this kind were recorded. An interesting diagram and X-ray are published with the article.

H. W. MEYERDING.

**Packard, G. B.: The Management of the Convalescent Stage of Hip Disease.** *Tr. Am. Orth. Ass.*, Phila., 1914, June. By Surg., Gynec. & Obst.

The author emphasizes the following points: Importance of the subject; duration of treatment, which varies according to the resistance of the

individual; time of diagnosis and efficiency of treatment; importance of X-ray findings as a guide to the question of further protection of the joint; prolonged care required in many cases that are apparently free from activity; the cause of relapses; the question of deformity; the value of motion and its interpretation in many cases apparently arrested after long and serious involvement; and the significance of adduction and abduction in the late stage of hip disease, not always recognized.

The conclusions are:

1. Treatment is discontinued many times when the disease is active.

2. The deformity should be corrected, if possible, without trauma to the joint.

3. The X-ray findings are very valuable, and pictures should be taken at frequent intervals.

4. The joint should be protected and the patient kept under observation as long as there is the slightest indication of disease, regardless of subjective symptoms or expenditure of surgeon's time.

**Geist, E. S.: Supernumerary Bones of the Foot—the So-Called Tarsalia.** *Tr. Am. Orth. Ass.*, Phila., 1914, June. By Surg., Gynec. & Obst.

The author reports a röntgen study of the feet of one hundred individuals who have never presented any foot symptoms.

The studies of Pfizner and Dwight and others have shown that some of the supernumerary bones of the foot are of exceedingly frequent occurrence, such, for instance, as the os trigonum, the os peronei, and the os tibiale. The studies of these researchers were confined to dead-house material, and it was not known whether the subjects had ever presented foot symptoms or not.

Since the advent of radiography, the knowledge of these bones has become important on account of the fact that they are frequently mistaken for fractures. It is of interest, therefore, to ascertain whether these various supernumerary bones occur as frequently as is indicated by the statistics given by the authors above mentioned.

This X-ray study of the bones of 200 normal feet almost exactly corroborates the statements of Pfizner and Dwight. The following are the results obtained in this study:

Os trigonum.....	8%
Os peronei.....	7%
Os tibiale.....	14%
Os vesalii.....	1%
Accessory calcis.....	2%
Os intermetatarsium.....	2%
Os intermetasali.....	Indefinite.

A knowledge of these supernumerary bones is of importance, as they have frequently been mistaken for broken-off pieces of tarsal bones,—the literature in no country being free from errors of this sort. It is further necessary for the medicolegal expert to be acquainted with these normal anatomic variations.

## SURGERY OF THE SPINAL COLUMN AND CORD

**Adams, Z. B.: The Causes, and Their Relation to the Treatment of Lateral Curvature of the Spine.** *Boston M. & Surg. J.*, 1914, clxx, 786.

By Surg., Gynec. & Obst.

Several years ago Max Boehm called attention to the numerical variation of the spine as a frequent cause of scoliosis. It was especially the asymmetrical sacralization he considered as most important. In a former paper based upon the examination of skeletons, Adams came to the conclusion that abnormalities of the lumbosacral articulations are probably of much greater importance in this direction than asymmetrical sacralization. This conclusion has been brought into greater prominence by an extensive study of X-ray plates of patients with lateral curvature. So far, in 22 unselected cases, abnormalities have been found which are considered to be the cause of the scoliosis, except in one case of infantile paralysis where no bony abnormality was noticed. The reason why scoliosis most frequently develops between 10 and 14 years is that at this age the anterior lumbar curve becomes constant and the weight of the upper trunk is increasing very rapidly. The increased tipping throws greater strain on the articular processes; and, as the angle of inclination increases, the horizontal thrust becomes more vertical and the strains tend to unite. Hence, when these processes are defective, scoliosis develops.

In discussing therapy, Adams compares critically the methods of Abbott and Forbes. Both methods give good results in some cases and fail in others. Neither of them considers the true cause as seen by Adams, who suggests operative treatment if conservative methods fail, or even before correction is attempted. Such operation should strive to remove bony obstacles or lock together defective articular processes. From a rational point of view, children with lateral curvature should be taught to sit with a rounded lower back and to stand in the flat-back position, for this will keep the sacrum under the spine.

C. H. BUCHOLZ.

**Galloway, H. P. H.: The Treatment of Paralytic Scoliosis by Bone-Grafting.** *Tr. Am. Orth. Ass.*, Phila., 1914, June.

By Surg., Gynec. & Obst.

Galloway reports three cases of paralytic scoliosis treated by Albee's bone-grafting operation. He draws attention to the peculiar difficulties of treating scoliosis due to paralysis of the muscular guy-ropes which normally maintain the erectness of the spine. In examining such a case, if the patient be first placed face downward, and then examined sitting or standing, the extremely vicious effect of the superincumbent weight of the head and shoulders is easily seen; hence, constant recumbency is apt to be recommended; but as most cases occur early in life, this is but a temporary solution of the

problem, and the physician is driven to attempt mechanical support, which is relatively futile.

The author first tried bone-grafting for this condition in July, 1913, on a boy of six years with a severe paralytic scoliosis together with marked paralysis of both lower extremities. The spinal distortion had been rapidly growing worse. Inasmuch as the severe deformity almost disappeared when the child was placed face downward, it seemed rational to consolidate the area of greatest deformity while the child was in this position, thus making it impossible for that part of the spine to bend sideways or twist when the erect posture was resumed. Through a long, curved incision the dorsolumbar region of the spine was exposed, and the spinous processes of nine vertebrae were split anteroposteriorly into lateral halves. While assistants made traction on the left arm and leg to help obliterate the deformity, a long heavy bone-graft from the tibia was inserted into the cleft in the bones and securely sutured in position. A recumbent position was maintained for ten weeks, followed by the wearing of a removable corset. Very marked improvement has been maintained, as is shown by photographs taken before the operation and ten months later.

A second case was less favorable for operation, and as the case was not followed up the result is not known.

The third case, a girl of five, had complete paralysis of both lower extremities and so much distortion of the dorsolumbar region that, even when recumbent, there was great apparent shortening of the right lower extremity from tilting of the pelvis, which was overcome by preliminary traction for two weeks on a double Thomas frame. After operation the attempt to continue the necessary traction was largely defeated by the formation of a pressure-sore on the perineum; because of this the spine became rigid, while the pelvis was tilted and the result was disappointing. Had the preliminary traction been kept up for a much longer period before operation, so as to thoroughly overcorrect, the result would probably have been better than in either of the other cases.

Having behind him the experience gained in these three cases, the author feels justified in recommending further trial of the operation; but cases should be selected with the greatest care, the operation being reserved for cases of paralytic scoliosis where the deformity is increasing but the spine is still flexible and shows marked lessening of deformity in the recumbent position. The operation is applicable to adults as well as children. The unknown effects of growth on the grafted region of the spine, and the fact that years must elapse before the ultimate result of the operation can be known, are frankly recognized.



**Forbes, A. M.: Criticism of the Paradoxical Rotation or Physiological Treatment of Scoliosis.** *Tr. Am. Orth. Ass., Phila., 1914, June.*

By Surg., Gynec. & Obst.

Forbes has demonstrated by pathological specimens that scoliosis is not a deformity of the spine alone, but of the trunk and especially the thorax.

There are two kinds of scoliosis: (1) Physiological scoliosis, which is due to attitude and which is assumed many times every day by every person in his normal life; from this there is return. (2) Pathological, which is an exaggeration of physiological scoliosis and which is characterized by bony and other changes; from this there is no return.

The fundamental treatment of scoliosis is the production of physiological scoliosis of a reverse character to the pathological scoliosis already existing. This with the law of Wolff can be depended upon to cure all forms of pathological scoliosis. The law of Wolff, while a sure process, is a slow one; consequently, if the modifying and beneficent changes which are produced by the production of physiological scoliosis, can be accentuated, it is wise to do so. As has already been pointed out, however, it is impossible to make lateral pressure on the already deformed ribs. Pressure can be made behind the angle of the deformed rib, which pressure, with counter-pressure on the opposite side of the thorax, will tend to reverse the deformities existing.

The author begins his paper by citing the hypothesis on which this treatment is based and by reciting the twelve postulates upon which its practical application is founded.

**Prince, H. L.: The Treatment of Scoliosis by the Abbott Method.** *Tr. Am. Orth. Ass., Phila., 1914, June.*

By Surg., Gynec. & Obst.

Varying reports of success with the Abbott jacket are made. The reports indicate a possibility of improvement hitherto unexpected. The varying success with which the treatment is employed depends upon the mastery of its technique. This technique, while simple in theory, is very complex in practice, and it is difficult to apply a jacket which will exert force only in the desired direction.

A properly applied jacket needs very little padding. The less padding used, the less rib deformity will be produced. It is important that the jackets should give plenty of room in which the trunk may swing in its correction.

At the present time it is impossible to say much as to the prognosis of any given case, or as to the length of time necessary for treatment. A better knowledge of the etiology of scoliosis is necessary before this can be done. There will probably be found several etiologies; and it seems certain, from our present knowledge of the occurrence of anomalies in the lumbosacral regions, as pointed out by Adams, that surgery will be required for the correction of these anomalies before permanent cures can be promised in certain cases.

The conclusions drawn are as follows: Mild, many moderate, and some severe cases of scoliosis can be overcorrected and cured. The success will vary directly with the mastery of technique. In all cases the general condition will be improved by the jackets. It will be necessary to resort to operation in some cases, but the percentage of such cases cannot be learned until more is known of the etiology.

**Packard, G. B.: Recumbency in the Treatment of Pott's Disease.** *Am. J. Orth. Surg., xi, 3, 400.*

By Surg., Gynec. & Obst.

The fact that so many pitiable deformities are the result of Pott's disease shows that the value of the recumbency treatment needs to be emphasized still more. It is of most importance in those cases in which the dorsal vertebrae are involved, because here, on account of the natural curve of the spine, more weight comes on the bodies than on the articular processes when the patient is upright. The horizontal fixation is also most suitable for the growth of the child; while on the other hand, if the patient is up and around the growth of the trunk is very likely to be checked. It is the only efficient method for the cases which are complicated by paraplegia. Except in cases of paralysis, it is not as successful for adults as for children; confinement is irksome, and there is little fear of deformity.

W. A. CLARK.

**Ryerson, E. W.: Pott's Disease; Albee's Bone-Grafting Operation; Results in a Series of Twenty-Six Cases.** *Tr. Am. Orth. Ass., Phila., 1914, June.*

By Surg., Gynec. & Obst.

Of twenty-six unselected cases operated upon from six months to two and one-half years ago, twenty-one are apparently well and do not require apparatus. None of the twenty-six was injured and all were improved. Three cases suppurated, and in one the graft had to be removed. In another, a portion of the tip became necrotic; this was a case where scarlet fever developed on the seventh day, with a streptococcus infection occurring in the back and leg on the next day.

In this operation the grafts are sewed in under considerable tension, with bichloride paraffin silk, and in most cases some correction of the deformity is obtained. The author believes this operation is a valuable addition to the treatment of spinal tuberculosis.

**Ryerson, E. W.: The Transplantation of Bone in Pott's Disease.** *Surg., Gynec. & Obst., 1914, xviii, 578.*

By Surg., Gynec. & Obst.

The author reports the exhibition of thirteen operated cases at the Chicago Surgical Society's meeting. Two of the cases had been operated upon more than two years before. All of the cases show improvement, and many of them are apparently cured.

Ryerson expresses great satisfaction with the operation, which he has performed in twenty-eight



cases. He considers the Hibbs operation equally sound in principle, but has had no personal experience with it.

**Henderson, M. S.: Bifurcation of the Transverse Process of the Fifth Lumbar Vertebra.** *Tr. Am. Orth. Ass.*, Phila., 1914, June.

By Surg., Gynec. & Obst.

Henderson states, briefly, that abnormalities are most apt to occur in the vertebræ where a change is made from one type to another; e. g., the seventh cervical vertebra may have a rib and the first lumbar may have dorsal characteristics. The elongation and bifurcation of the fifth lumbar transverse process is an overdevelopment of the costal element such

as occurs in the sacral vertebræ to form the large ala. It may, under certain conditions, give rise to displacement of the vertebra itself causing pain and in some few cases paralysis.

Within the last two years in the Mayo clinic, 17 patients with bifurcation of the transverse process of the fifth lumbar vertebra have been observed; three were males, and fourteen were females. Only three gave symptoms which could be attributed to the condition present. The remaining 14 cases were discovered accidentally in radiograms made for other conditions. In four cases the condition occurred on both sides, seven on the right and six on the left. One case only was operated on. The part of the process impinging on the sacrum and ilium was chiseled away; the relief was but temporary.

## SURGERY OF THE NERVOUS SYSTEM

**Wahl, H. R.: Neuroblastomata; with a study of a Case Illustrating the Three Types That Arise from the Sympathetic System.** *J. Med. Research*, 1914, xxx, No. 2, 205.

By Surg., Gynec. & Obst.

The author's case and his study of the literature has led him to the following summary and conclusions in regard to this class of tumors.

He believes that nerve-tissue may give rise to new-growths, which are properly called neuroblastomata. They may occur in any part of the nervous system and are of two types, according as they are composed chiefly of differentiated or undifferentiated elements. The neurocytoma is the undifferentiated type arising in the cerebrospinal nervous system. The corresponding type derived from the sympathetic system is the malignant neuroblastoma of the sympathetic nervous system, or the "*sympathoma embryonale*." The ganglioneuroma and the chromaffin tumor represent the differentiated nerve-growths, the latter taking its origin only in the sympathetic nervous system, the former arising also in the cerebrospinal nervous system. Most neuroblastomata, especially of the undifferentiated type, arise in the sympathetic nervous system.

Most of the neuroblastomata of the differentiated type contain both mature and immature cell elements, one type greatly predominating over the other. Foci of indifferent cells are usually present in both ganglioneuromata and in chromaffin tumors. Differentiated elements occur, but less frequently, in the undifferentiated neuroblastomata. There may be any combination of differentiated and undifferentiated elements in these nerve-tumors.

Though the nerve-tumors of the sympathetic system — malignant neuroblastomata, ganglioneuromata, and chromaffin tumors — show very marked differences in appearance, behavior, and morphology, they are closely related genetically, being varying differentiations of the same mother cell — the sympathetic formative cell, "*Bildungszelle*" — which normally differentiates into ganglion

cells, peripheral-glial cells, and chromaffin cells of the sympathetic system. The intimate relationship of these tumors to one another is established by the infrequency with which pure neuroblastomata of any one type occur; by the occasional occurrence of nerve-tumors composed of two distinct portions, each composed of a different form of nerve-cells, with transitions between them; and by the author's tumor containing all three elements actively participating in the growth. Accordingly, the ganglioneuroma and the chromaffin tumor are the differentiated counterparts of the malignant neuroblastoma.

The malignant neuroblastomata of the sympathetic system metastasize rapidly and extensively and are especially prone to invade the liver, lymph-glands, and bones, but often show comparatively little infiltration into the surrounding tissues. These metastases occur most often by way of the bloodstream, but may also follow the lymph-channels. There is usually a marked tendency to hæmorrhage and to the formation of extensive areas of necrosis.

All forms of neuroblastomata are undoubtedly much more frequent than has been generally recognized, their identification being often easily overlooked.

GEORGE E. BEILBY.

**Heineke: Direct Transplantation of Nerves into Muscles** (Die direkte Einpflanzung des Nerven in den Muskel). *Zentralbl. f. Chir.*, 1914, xli, 465.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author attempted to determine experimentally whether it was possible to restore the function of a paralyzed muscle by the direct transplantation of a nerve into the muscle substance. He resected the tibial nerve in the thigh of a rabbit, then incised the peroneal nerve and transplanted its proximal end into the gastrocnemius muscle. After 14 days, faradic and galvanic stimulation of the peroneal nerve in the thigh caused slight contractions in the gastrocnemius. After 4 weeks the entire gastrocnemius reacted with strong contractions; after 8



weeks the contractions could not be distinguished in force or extent from normal, and not only the muscle into which the nerve was transplanted contracted, but the neighboring muscles of the flexor group. Even muscles that had been deprived of their nerves for 21 days could be restored to activity by the transplantation of a normal nerve. WREDE.

**Henriksen, P. B.: New Experiments in Nerve-Regeneration** (Nye undersøkelser over nerveregeneration. *Norsk mag. f. Lægevidensk.*, 1913, June. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

After nerve-suture, sensory conduction begins again very soon, even at a time when new-formed axis cylinders cannot yet be demonstrated in the peripheral part of the cut nerve. In Recklinghausen's disease there is unaltered conductivity in the nerves, although the nerve tracts throughout are interrupted by numerous tumors, and in places the ordinary picture with marked differentiation of medullary sheath and axis cylinders is replaced by a mass of cells that are only slightly differentiated. On the peripheral side of the tumors there are normal nerve-fibers, where according to Waller's law we should expect to find degenerated nerve-fibers.

This histological picture is also very similar in the two classes of cases. After cutting the nerve the

nuclei of the neurilemma proliferate in the central and peripheral stumps. They become surrounded with protoplasm that extends outward in long threads. Through continuous division of the nuclei the threads increase in number as well as length, so that they form bundles inside the old Schwann's sheath, and compress the medullary sheath and the axis cylinder. These bundles of fibers are most abundant in the central stump, but they exist also in the peripheral one. They project from the cut surface of both nerve ends as a gelatinous mass. In the protoplasm threads, medullary sheath, and axis cylinder are differentiated, while for each nucleus a segment of nerve is formed that may be regarded as a single cell. The author shows how this differentiation is brought out in preparations stained with hæmatoxylin, Van Gieson's fuchsin, picric acid, and Weigert's medullary sheath stain. In Recklinghausen's disease the nuclei of the neurilemma proliferate also and become surrounded with protoplasm that fills the old Schwann's sheath. But here there is no differentiation of the new-formed tissue. It proliferates further and forms tumors. In both cases the continuance of the nerve condition is explained by the fact that the new-growths are of nervous origin with their point of origin in the nuclei of the neurilemma. ASBJ. NILSEN.

## DISEASES AND SURGERY OF THE SKIN, FASCIA, APPENDAGES

**Lange, H.: The Present Status of Lupus Treatment** (Der gegenwärtige Stand der Lupustherapie). *Dissertation*, Freiburg, 1913.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The treatment consisting of scarification, acupuncture and excochleation has the advantages of short duration, cheapness, and relative certainty in small closed cases of lupus. Diathermia is indicated in small superficial areas where there is less question of cosmetic effect than of rapid recovery. Puncture with the galvanocautery is easily done and in many cases is advantageous. The advantages and disadvantages of different methods of treatment are given. Especially since the introduction of the Finsen treatment, a large number of cures have been affected at the Freiburg clinic, which far outweigh its slight disadvantages. Extirpation is preferred in not very extensive cases of lupus on the trunk and the extremities. FRITZ LOEB.

**Muschter, J.: Results of Combined Treatment for Lupus** (Über Dauererfolge bei kombinierter Lupustherapie). *Dissertation*, Halle, 1913.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

On account of the general inadequacy of the results of individual methods of treatment a combination treatment has recently been used, proposed by Doutrelpont and Grouven, and good results have been obtained. The combination most frequently used is as follows: Excochleation, cauterization with Paquelin's cautery, injection of tuberculin,

bichloride compresses, pyrogallol acid, and röntgen treatment.

Tuberculin treatment is given first, combined with bichloride compresses for a few days, followed by excochleation and cauterization. The latter is necessary to close the lymph and blood-vessels and hinder a scattering of the tubercle bacilli. The excochleated surface is treated with bichloride compresses until the scar is discharged. The further destruction of the remaining tubercular tissue is accomplished by pyrogallol salve, 10 per cent, until healthy granulations appear. Pyrogallol salve and bichloride compresses should be alternated. While the pyrogallol and bichloride is being used, röntgen treatment may also be given. Of the 32 lupus cases, the histories of which are given, 5 were treated by excision and remained free from recurrence. The rest were given the combined treatment; 23 of them recovered without recurrence, in three there was recurrence and in one case there was marked improvement. FRITZ LOEB.

**Salomon: The Treatment of Ulcer of the Leg, with Pittylen** (Die Behandlung der Ulcera cruris mit Pittylen). *Allg. med. Zentral-Zeit.*, 1914, lxxxiii, 91. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Pittylen is warmly recommended in the treatment of inflamed varicose veins and ulcers of the leg. In inflamed varicose veins without ulceration the inflamed part is thickly smeared with pittylen-zinc

oil (pittysten 10.0, zinc oxide 30.0, olive oil to 100.0), and bound with gauze. Following the application the itching stops immediately and the inflammation soon subsides. Ulcers are treated with pittysten salve (pittysten 1.0, zinc oxide 2.0, bismuth sub-

nitrate 2.0, Ungt. lenient. Ungt. simpl. aa 10.0), and the area around the ulcer thickly smeared with pittysten oil. This treatment is found very soothing to the patient and leads to a relatively early cleansing and healing of the ulcer. WORTMANN.

## MISCELLANEOUS

### CLINICAL ENTITIES — TUMORS, ULCERS, ABSCESSSES, ETC.

**Murphy, J. B.: Factors of Resistance to Heteroplastic Tissue-Grafting; Studies in Tissue Specificity.** *J. Exp. Med.*, 1914, xix, 513.  
By Surg., Gynec. & Obst.

Previous observations have tended to show conclusively that tissues cannot be transplanted from one species to another, even though these be closely related. Two theories have been brought forward to explain this failure in heteroplastic grafting. The two schools are still at variance and neither has been able to produce evidence conclusive enough to convince the other.

The first and most prominent theory is that of Ehrlich, termed *athrepsia*. The experimental foundation for this hypothesis is the so-called zigzag transplantation of tumors between rats and mice. It was observed that a mouse tumor when grafted into a rat, or *vice versa*, would survive and proliferate for six to eight days, but would later fail rapidly and be absorbed. If, however, the mouse tumor was removed during the proliferating stage and reinoculated into a mouse it continued to grow actively. After a period of six or eight days' active growth in the mouse it could again be grafted into a rat. This zigzag grafting could be carried on indefinitely with no apparent effect on the tumor tissue or in lessening the activity of its growth. The interpretation suggested by Ehrlich is that each species provides its tissues with a specific food substance which is necessary for its maintenance and growth. The temporary survival of the mouse tissue in the rat is due to the amount of this specific food carried over with the graft. When this is exhausted the graft dies unless returned to its native species, where it will accumulate a fresh supply of the specific food and again be able to survive for a time in a foreign species.

The chief opponent of this theory is Bashford, who rests his objection on the findings in an experiment in which rats were inoculated a second time with mouse tumor. Under these conditions the second graft, although containing an equal amount of the hypothetical food substance, would survive only two to three days. From this fact he concludes that there is an active immunity developed against the cancer-cell as a foreign proteid. The time of survival of the first graft he considers the time required for the development of the active immunity.

Bashford claims that the immunity to homoplastic grafting is an entirely different process and that it depends entirely on the blood-vessel and stroma reactions. The merits of the two theories are not discussed in this article, but are quoted by the author to give an idea of the present views on the subject.

In a previous communication it was pointed out that the avian embryo has no defensive mechanism against the growth of tissues of a foreign species. The tumor tissue of a rat, for instance, by transference from embryo to embryo could be kept growing in the chick for an indefinite period. The rat tissue underwent no marked change during its long sojourn in the chick embryo, as was shown by the fact that at any time during this period it could be replanted successfully into its native species, but was promptly disintegrated when grafted into the adult chicken.

Since it was found possible to graft various adult tissues into the embryo, the experiment was repeated by the author *in vivo*. In the first series, comprising 20 experiments and over 150 embryos, grafts of rat sarcoma and bits of adult chicken tissues were placed side by side in the outer membrane of seven-day chick embryos, according to the method described. The adult chicken tissues used were spleen, kidney, liver, bone-marrow, and connective tissue. The eggs were returned to the incubator, and at intervals up to the eighteenth day of incubation, part of each lot was opened and the grafts were removed for microscopic examination.

The author then seemed to have demonstrated that the chick embryo offers suitable conditions for the growth of implanted tissues, whether these be embryonic or adult, of the same species or a foreign one. The chick at about the time of hatching develops a defensive mechanism against the tissue of foreign species. This resistance can be supplied to the embryo in the early stages if grafts of adult spleen or bone-marrow are implanted. Under these conditions the embryo exhibits the same resistance to foreign tissue as does the adult, and presents the same histological manifestations about the graft. Furthermore, the same tissues, spleen and bone-marrow, when grafted into an embryo with an established and growing rat tumor, bring about a retrogression and absorption of the foreign tissue. Other adult tissues do not supply this power to the embryo. GEORGE E. BEILBY.



**Goljanitzky, J.: Experiments in Transplantation of Tissues, Stained during Life** (Über Versuche von Transplantationen an intravital gefärbten Tieren). *Med. Obozr.*, 1914, lxxxi, 45.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author stained the tissues in living mice and rats by the intravenous injection of a 5 per cent carmine solution and then transplanted the skin and fascia. After the transplantation intravenous injections of 1 per cent trypan blue and 1 per cent isamin blue were given and after that the transplanted pieces were removed at different intervals of time for microscopical examination.

In autoplasmic transplantation of skin a large part of the epithelium and connective tissue was destroyed, but the necrosis was only a partial one. The beginning of the necrosis was shown in the connective-tissue cells by a flowing together of the granules of protoplasm that had been colored carmine. The diffusion of the protoplasm granules observed in the first few days returned to normal later. Even in the later stages there was no change in the cell nucleus. In autoplasmic transplantations macrophages were seen only at the edges of the transplant and in the later stages, while in the earlier stages polynuclears predominate. In homoplasmic transplantation of the skin the picture is similar for the first few days but total necrosis finally takes place. In homoplasmic transplantation of fascia the author did not observe necrosis. The intravital method of staining makes it possible to demonstrate beginning necrosis earlier than can otherwise be done and before destruction of the cell nucleus begins.

V. SCHILLING.

**Carrel, A.: The Transplantation of Organs.** *Med. Press. & Circ.*, 1914, xcvi, 460.

By Surg., Gynec. & Obst.

During the last few years it has been definitely established that autoplasmic transplantations of organs are practically always successful; that homoplasmic transplantations, although immediate results may be excellent, are nearly always ultimately unsuccessful, and that heteroplasmic transplantations are always unsuccessful. Homoplasmic grafts alone would be of use, but before being practicable they must be rendered as safe as autoplasmic transplantations. As to the cause of these phenomena, nothing is definitely known. It seems that the absorption is due to the power of the organism to eliminate foreign tissue. This is attributed to the spleen or bone-marrow. When the action of these organs is less active, foreign tissue can develop rapidly after it has been grafted.

The surgical side of the transplantation of organs is now completed, as the results are excellent from an anatomical standpoint. As yet these methods cannot be applied to human surgery, for the reason that homoplasmic transplantations are almost always unsuccessful from the standpoint of the functioning of the organs. Efforts must now be made toward the biological methods which will prevent

the reaction of the organism against foreign tissue and allow of the adapting of homoplasmic grafts to their hosts.

EDWARD L. CORNELL.

**Beckman, E. H.: Complications Following Surgical Operations.** *Surg., Gynec. & Obst.*, 1914, xviii, 551.

By Surg., Gynec. & Obst.

Complications in a series of 6,825 hospital cases are reported from the Mayo Clinic, for the year 1913. All of these patients had major surgical operations. None of them were fatal, the deaths being reported elsewhere. There were 117 infections, or a percentage of .017 for the series. Bacteriological investigation was made from wounds in all infected cases. Thirty-five cases, in which the wound discharged a serum or seropurulent material, showed no growth in cultures taken. All cases that showed any discharge whatever in the wound were considered as infected. Pulmonary complications are divided into acute congestion, pleurisy, bronchitis, bronchopneumonia, and lobar pneumonia. The total number of pulmonary complications in the series was 87, or a percentage of .012 for the entire series. Ether was used as a general anæsthetic, novocaine as a local anæsthetic. There were 14 cases of thrombophlebitis of the femoral or saphenous veins, six on the right and eight on the left side. Most of them occurred in cases that were not infected. Acute dilatation of the stomach occurred but three times. It is believed that early and systematic lavage has been responsible for the infrequency of this condition.

#### SERA, VACCINES, AND FERMENTS

**Von Zubrzycki, J. R.: Studies of the Meistagmin Reaction in Carcinoma and Pregnancy** (Studien über die Meistagminreaktion bei Carcinom und Schwangerschaft). *Arch. f. Gynäk.*, 1914, cii, 152.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The surface tension of the sera of pregnant women and patients with carcinoma was tested with an antigen of linoleic acid and ricinic acid, which were dissolved in absolute alcohol. The sera of normal, non-pregnant women reacted negatively with a few exceptions, and there was a positive reaction in almost all cases of pregnancy and carcinoma. In syphilitics with a positive Wassermann there was not a single positive meistagmin reaction. The practical utility of the reaction is limited, because of the fact that many tubercular patients and those with a number of other diseases may react positively.

GRÄFENBERG.

**Hitchens, A. P.: Current Developments and Problems in Vaccine Therapy** *Interst. M. J.*, 1914, xxi, 537.

By Surg., Gynec. & Obst.

It is the purpose of the author to show that the limitations which at present characterize the treatment of infections by vaccines are not permanent, and that further investigations will result in a wide extension of their field of usefulness.

One of the phases of work which is in need of



further development is the preparation of vaccines. To produce a more efficient vaccine an effort should be made: (1) to obtain a purer antigen; (2) to obtain a vaccine which will cause a minimum of local and general reaction; (3) to obtain a vaccine which will render the subject immune within the shortest possible space of time; (4) to obtain an antigen in a state more readily available when brought into contact with the tissues.

It has been found that the peptone in the culture media on which bacteria are grown will, under proper conditions, cause anaphylactic shock. This would suggest that bacteria be grown on peptone-free culture media, or a second way of obtaining them peptone-free would be to use washed bacteria. Rowland has made a highly efficient vaccine by using the extracted nucleoproteins from bacteria. Tiberti obtained good results from the anthrax-nucleoprotein.

Rasenow has shown that when bacteria are suspended in saline solution the latter becomes very toxic, as a result of autolysis. In the case of the pneumococcus he has shown that the toxic autolysate is not necessary for the production of immunity. This confirms Vaughn's statement that the poisonous part has no relation to the antibodies which make the system refractory to disease. Vaughn's split products are used in the hope that the poisonous portion of the protein molecule may be eliminated, thus making it possible to give the antigen in much larger doses without fear of a negative phase.

Bacterial antigens used in the complement-fixation test may prove efficient as vaccines, although this is not necessarily the case as they are chemically related to the lipoids.

Hirschfelder has prepared a vaccine by the partial digestion of the bacteria and has obtained good results although his reactions are very severe. The author suggests that perhaps the administration of some other non-specific substance causing so profound a reaction might give the same results.

Fostered by the French schools, interest in sensitized vaccines is apparently increasing. This method consists of mixing an immune serum with a vaccine, or as in diphtheria a mixing of toxin and antitoxin; this is supposed to produce both a passive and an active immunity; this immunity, however, does not last long. Recently, living sensitized vaccines have been used for immunization against diseases such as typhoid, Asiatic cholera, etc. There is, however, here a possibility of causing typhoid carriers. It is claimed that sensitized vaccines are likely to be more prompt in their effect, and that the negative phase is much shorter.

It would seem from recent studies that in order to cure a disease all that is necessary is to inject a vaccine which produces antibodies which destroy the bacteria. This is true up to the point of the production of the antibodies but the bacteria reaching the tissues are able to resist the action of the normal antibacterial substances. This is ac-

complished by chemical (toxine) and physical means. Antitoxins overcome the chemical barriers.

The most promising field of study for laboratory men and others at present is the relation of the infecting bacteria to the blood and lymph supply, and how to bring the antibodies formed into contact with the infecting bacteria. The question of vaccine therapy is now one of "Hydraulics." He suggests that when the content of the blood in antibodies is the greatest, some drug should be given to cause a local active hyperæmia in the region affected.

EUGENE CARY.

**Burnham, A. C.: Vaccine and Serum Therapy in Septicæmia.** *Ann. Surg.*, Phila., 1914, lix, 652.

By Surg., Gynec. & Obst.

The paper is based on the study of the records of one hundred and eleven consecutive cases of severe infection entering the Presbyterian Hospital, New York City, during the years of 1905-1913. The cases were treated by many different methods. The study of cases was especially directed toward the determination of the efficacy of vaccine and serum therapy. The author's conclusions are as follows:

1. Septicæmia with true bacteræmia is a disease of great severity and of exceedingly high mortality, but, except in the type associated with malignant endocarditis and in terminal infections, many cases are amenable to treatment.

2. Vaccines are of benefit in many of the cases not overwhelmed at the onset by the severity of the infection, and clinically seem to benefit the majority of the cases.

3. Antistreptococcic serum is of great value, especially during the early stage when its bactericidal powers are most pronounced, and if given in sufficient dosage during the period of invasion will often change a systemic bacteræmia into a localized infection.

4. The combination of antistreptococcic serum, used in the early stage of septicæmia, together with autogenous vaccines, used as soon as they can be prepared from blood cultures, seems to be particularly beneficial. If the blood cultures are sterile, vaccines may be prepared from the local lesion, although this method is unsatisfactory and may lead to errors. Stock vaccines are still less desirable.

5. Neither sera nor vaccines, although they usually do little harm, are free from danger, and the dosage and periods should be carefully worked out.

6. Open-air treatment in cases in which cultures are sterile and as an adjunct to vaccine and serum therapy seems to be the best method of increasing the resistance of the patient.

BARNEY BROOKS.

**Weil, R.: Studies in Anaphylaxis; a Study of the Cellular Theory of the Graphic Method.** *J. Med. Research*, 1914, xxx, No. 2, 87.

By Surg., Gynec. & Obst.

In this study of anaphylaxis the author endeavors to determine whether reaction occurs within the



cells of the body, as is believed by some, or in the fluids, as is claimed by other observers. To clear up these disputed points, he has carried out a long series of experiments, and in the beginning he points out the fact that guinea pigs which have been injected with the serum of a rabbit immunized against a foreign proteid become hypersensitive to that proteid. In previous experiments by Dale it has been shown that the uterus of a guinea pig which has been passively sensitized by this device, making use of the serum taken from an immunized guinea pig, presents exactly the same anaphylactic reaction as does that of an actively sensitized animal.

From his study, the author reaches the following conclusions:

1. The uterus of a hypersensitive guinea pig responds in a characteristic manner upon the addition of the antigen (Schultz-Dale).

2. The presence of immune bodies in the blood of the guinea pig, whether in small or in large amounts, does not lead to the slightest response upon the addition of antigen to the uterine preparation.

3. Desensitization of the living guinea pig after active sensitization leads to impairment of the power of response by the uterine muscle. If desensitization is complete the uterus fails entirely to react upon the addition of the antigen; if incomplete, the uterine contraction is correspondingly enfeebled and sluggish.

4. The uterus removed from an actively sensitized guinea pig which has been killed in anaphylactic shock may either fail to respond or may give a somewhat impaired response. From this observation the conclusion is drawn that a sensitive animal may be killed by an amount of antigen considerably less than would be required to saturate the antibody content of the animal.

5. In passively sensitized guinea pigs it is shown that the dose of immune serum sufficient to prepare the guinea pig for a fatal anaphylactic shock induces a uterine condition in which the addition of antigen leads to a typical response. Smaller amounts, which *in vivo* prepare the guinea pig for a moderate reaction, give, as an analogous result, a proportionally diminished response in the uterine preparation.

6. Desensitization of the passively sensitized guinea pig deprives the uterus of its power of response.

7. The gradual and spontaneous loss of sensitiveness by the passively prepared guinea pig is accompanied *pari passu* by a loss on the part of the uterus of its capacity to respond to the antigen.

8. This loss precedes the development of an anaphylactic condition toward the heterologous (rabbit) immune serum employed, exactly as in the living animal.

9. These data lead to the following generalizations: (1) The anaphylactic condition is entirely dependent upon the sensitization of the cells of the body. (2) All conditions which in any way influence the degree of sensitiveness of the cells, in the same degree alter the anaphylactic state, or sensitiveness,

of the animal. (3) The presence of immune bodies in the blood, whether in small or in large amounts, does not in the slightest degree contribute toward the production of the anaphylactic response in the guinea pig.

GEORGE E. BEILBY.

## BLOOD

### Hill, L. W.: Report on Leucocytic Inclusion Bodies.

*Boston M. & Surg. J.*, 1914, clxx, 792.

By Surg., Gynec. & Obst.

The author has investigated a series of cases at the Boston City and Massachusetts General Hospitals with a view of ascertaining the relation between Döhle's leucocytic inclusion bodies and several other diseases.

The discoverer of these bodies originally considered them to be fragments of a disintegrated spirochæta supposed to be the cause of scarlet fever. This theory has been discredited by subsequent investigators, and by many they are considered to be merely fragments of disintegrated nuclei, by others to be broken-down tissue fragments which have been ingested by the leucocytes.

One hundred specimens of blood were examined by the author from patients suffering from scarlet fever, erysipelas, pneumonia, syphilis, empyema, secondary anæmia, and serum rash, including blood from thirteen normal individuals.

The majority of the cases of scarlet fever, erysipelas, and pneumonia showed inclusion bodies while none of the others showed them. The author arrives at the conclusion that these bodies are composed of nuclear material, the disintegration in all probability being due to toxins of the streptococcus.

JAS. H. SKILES.

### Schattauer, F.: Treatment of Internal Hæmorrhage (Zur Therapie innerer Blutungen). *Frauenarzt*, 1914, xxix, 3.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Almost all the preparations which are used for the treatment of internal hæmorrhage, hydrastinine, stypticin, and ergot, depend on their property of having a vasotonic effect on the musculature of the vessels. But the contraction of the vessels is produced, not only in the bleeding region, but on all the blood-vessels, and this causes an unpleasant rise in blood-pressure. Gelatine and astringents have been given to increase the coagulability of the blood.

A new preparation that produces hæmostasis and yet avoids a rise in blood-pressure is styptase. It consists chiefly of tannic potassium chlorate and causes changes in the colloids; it also inhibits the formation of transudates and exudates. Schattauer has treated a case of bleeding ulcer of the rectum and cases of endometritis and post-abortion hæmorrhage with styptase. The preparation is to be recommended in hæmorrhage of the uterus, except for puerperal hæmorrhages, in which the purely mechanical effect of the uterine musculature



is defective. In puerperal hæmorrhage it serves as an auxiliary to ergot treatment.

BRETZ.

**Cumston, C. G.: The Technique of Comparative Hyperæmia.** *Ann. Surg., Phila.*, 1914, lix, 645.

By Surg., Gynec. & Obst.

The author describes in detail a method of application of Moszkowicz's sign. The essentials of the correct method of applying the test are the securing of a complete anæmia of the diseased extremity and its mate, the sudden simultaneous release of the constricting bands, and careful observation of the waves of hyperæmia in a good light. Any venous stasis is to be avoided. The extremities to be compared are first emptied of blood by being held in an upright position, or, if this is painful, by an elastic bandage applied so as to drive the blood toward the heart. The arterial flow is then completely obstructed by a flat rubber band for a period of five or six minutes. Following the release of the constricting bands the two extremities are observed carefully and the rapidity, intensity of color, and stopping points of the hyperæmia waves are noted.

The author discusses briefly the variations seen in practice and concludes that the diagnostic value of the test should be limited to cases of gangrene due to vascular occlusion, in which cases the test is the surest guide to the proper site of amputation, which should be done quite a little above the lower limit of the hyperæmic zone.

BARNEY BROOKS.

**De Tarnowsky, G.: Personal Experiences with Coagulène-Kocher-Fonio.** *Surg., Gynec. & Obst.*, 1914, xviii, 641.

By Surg., Gynec. & Obst.

Coagulène is a preparation obtained through fractional centrifugation of mammalian blood, whereby the blood platelets become separated from other cell elements. It is used, locally or intravenously, in a 5 or 10 per cent aqueous solution freshly sterilized. Its action is to accelerate and intensify the normal coagulating time of the patient's blood; used locally in the course of surgical operations it obviates the use of ligatures, allows closer coaptation of tissues and prevents the formation of post-operative hæmatomata; its greatest field of usefulness lies in bone and intracranial work. Following its use no drainage is necessary. Intravenously it may be given in quantities varying between 100 and 250 ccm. of a 5 per cent solution. Favorable reports are already available concerning its efficacy in hæmophilia and gastroduodenal hæmorrhages, in hæmorrhagic pancreatitis, and in purpura hæmorrhagica.

Coagulène was elaborated in Kocher's clinic in Berne by his first assistant Fonio. It is at present sold in the form of a granular substance having a sugar basis. This substance is weighed and dissolved in sufficient sterile water to make either a 5 or 10 per cent solution which is sterilized by boiling not to exceed five minutes. The aqueous solution must be used within 24 hours as it rapidly loses its

activity. The dry preparation retains its normal activity for several months. By means of an ordinary syringe a few drops of the solution are dropped on bleeding surfaces and allowed to remain *in situ*. For intravenous use the ordinary apparatus used in normal saline injections suffices.

**Liwanoff, A. W.: The Biological and Surgical Significance of Thrombokinase** (Die biologische und chirurgische Bedeutung der Thrombokinase). *Voienno-med. J.*, 1913, ccxxxviii, 203.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

From a study of the coagulation of the blood and the rôle that thrombokinase plays in it two therapeutic possibilities are disclosed: By the administration of thrombokinase the deficient coagulability of the blood may be increased in hæmophilia and cholæmic hæmorrhages, and by inactivating the increased thrombokinase content of the blood the danger of thrombosis may be overcome. It also gives an explanation of thromboses in the blood-vessels after traumatic and post-operative hæmatomata.

The author describes the method of obtaining thrombokinase in use at Von Oppel's clinic, and gives some case histories illustrating the significance of large hæmatomata in the formation of distant thromboses and infarcts. Large hæmatomata should be opened, freed of blood-clots, and tamponed, to avoid thrombokinase intoxication. By repeated administration of small doses of thrombokinase an artificial hæmophilia may be produced by immunization.

STROMBERG.

**Amberg, Jr., S.: Fat Embolism in Fractures, with Special Reference to the Early Symptoms**

(Über Fettembolie bei Frakturen mit besonderer Berücksichtigung der Frühsymptome). *Wien. klin. Rundschau*, 1914, xxviii, 95.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author describes two cases of fat embolus after fractures with severe symptoms, one of which recovered after ligation of the thoracic duct by Wilms' method, the other without any treatment.

The author discusses the question of whether early diagnosis and prognosis are possible. Of 17 unpublished cases 15 ended fatally, 7 of them within the first 12 hours; in all of the latter there was a fracture of the pelvis.

The sudden death is explained by the fact that, on account of the great vascularity of the pelvic organs, fat passes directly into the blood in greater quantities. In these cases Wilms' operation cannot do much good, as the fat has not yet reached the lymphatic duct; at most its later absorption through the lymphatic vessels can be rendered harmless. According to Grondahl's theory, the diagnosis can be made from three symptoms: numbness followed by symptoms of shock, after a free interval, rise of temperature after a preceding fall and rapid pulse, Mahler's mounting pulse. Prognosis cannot be made from the symptoms.

COSTE.



## BLOOD AND LYMPH VESSELS

**Horsley, J. S.: Surgical Repair of Blood-Vessels: Its Technique, Its Uses and Limitations.**  
*Surg., Gynec. & Obst.*, 1914, xviii, 536.

By Surg., Gynec. & Obst.

The author believes that sensational newspaper articles have done blood-vessel surgery much harm. Even in animals no organs, such as the kidney, and no limbs have been transplanted with permanent success. A transplanted limb continues paralyzed and useless; and while a transplanted kidney may functionate for a while, it gradually loses its structure. However, blood-vessel surgery has four fruitful fields: (1) Trauma of the vessels; (2) malignant growths that involve the blood-vessels; (3) aneurisms; and (4) transfusion of blood.

In suturing vessels, Horsley claims that the same principle of approximating endothelium obtains as in suturing intestines — only the endothelium is on the inside of the vessel. So in suturing vessels a flange must be turned out, just as in suturing intestines it must be turned in.

He describes his technique for vessel suturing as follows: Three guy sutures are inserted and attached to buttons on an arterial suture staff of his design. The threaded ends of the last two guy sutures are not cut but are used as a double mattress, or cobbler's, stitch. The suture staff converts the circumference of the vessel into a triangle and the vessel is held so that the intima is everted in the third that is being sutured. All stitches are inserted under the same tension instead of under varying tension, as when the sutures are held by hand, and a flange with everted intima is turned out, the intima being accurately approximated by the cobbler's stitch.

**Moure, P.: Study of Transplantation of Blood-Vessels and, Particularly, Its Application in Surgery to the Reestablishment of the Continuity of Blood-Vessels and Musculomembranous Channels** (*Étude des greffes vasculaires et particulièrement de leurs applications chirurgicales au rétablissement de la continuité des vaisseaux et des conduits musculo-membraneux*). *Thèses de doct.*, Par., 1914.

By Journal de Chirurgie.

This thesis constitutes the first general review of the subject in France. In each of the chapters the author reviews the facts previously known and adds his own experimental results and the clinical results obtained in human surgery. The technical part gives in detail the operative technique, which is so delicate that the slightest violation of asepsis may result in complete failure.

After having reviewed the work of Hoepfner, Carrel and Guthrie, Goyaunes, Lexer and Delbet, the author recalls the facts that a blood-vessel, completely isolated from the neighboring parts by aseptic denudation of its walls, continues to live; that vessels isolated from the body preserve their vitality for a relatively long time — eight days; that transplanted vessels adapt themselves to their new surroundings if they are sufficiently irrigated

and nourished. In this connection he tried transplantation of the omental vessels, but unfortunately numerous experiments on dogs were negative; the omental artery was rapidly transformed into a small fibrous cord.

He believes that some heteroplastic grafts may give better results than those with vessels preserved too long, if the grafts are taken from those animals whose serum is the least toxic for man. He admits that the heteroplastic graft tends to be progressively obliterated but says that it remains permeable long enough for the necessary collateral circulation to be established. Autoplastic transplantation of arteries is impossible, and the results with arteries that have been kept some time uncertain; therefore, he believes that the best method is the transplantation of sections of veins, external jugular or saphenous. He had perfect results in 13 cases with dogs. Histological examination confirms the clinical results. If the operation has been strictly aseptic there is no trace of inflammatory reaction; the presence of a mass of leucocytes with giant-cells is due to an attenuated infection. The transplanted vein does not play the part of a simple conducting tube, but lives independently, and undergoes changes in structure which make it resemble an artery, by hypertrophy of the middle elastic layer. Heteroplastic grafts are simply conducting tubes. Thrombosis and hæmorrhage are the two post-operative complications most to be feared, but both may be avoided by careful technique and rigorous asepsis.

Transplantation of vessels has been tried 17 times and succeeded 13 times in reestablishing the continuity of an artery; once to reestablish the continuity of a vein. Of these cases seven were aneurisms of the femoral or popliteal artery, with recovery in five cases and death in two, once from gangrene and once after four months, though the immediate result was satisfactory; there were three other cases of aneurism of the axillary, external iliac, and brachial arteries; death from thrombosis resulted in the first two cases, recovery in the third. In three cases the graft was made to replace a segment of the femoral resected in the course of operations for tumor: one was a failure, the two others successes.

Doyen's case, in which a segment of the popliteal was replaced by the jugular vein of a sheep, was a success.

Moure concludes that transplantation of vessels, though an exceptional operation, is absolutely indicated in certain cases. He describes a number of cases in which blood-vessel grafts have been used to restore the continuity of musculomembranous canals such as the ureter and the urethra. Tanton tried it in 16 cases of hypospadias or stricture. They were all failures, due, Moure thinks, to infection. But Cantas has used incomplete transplantation for urethroplasty with a perfect result persisting for 14 months. He left the saphenous vein adherent at first and detached the flap later and sutured it to the lower surface of the penis. This was a case of hypospadias. Tuffier tried venous urethroplasty once



without success. Iran made a successful attempt to restore Stenson's duct by means of a vein-graft. Payr drained the cerebral ventricles in hydrocephalus with a vein-graft; Ruotte used a vein-graft in ascites. An incomplete transplantation of the internal saphenous was utilized.

This interesting work seems to show that vascular transplantation, though still relatively limited in use, finds its most natural indication in reestablishing the continuity of arteries when ligation is impossible. The other uses are interesting or curious, but their doubtful or bad results make further experimental research necessary before applying them in human surgery.

PIERRE CRUET.

### SURGICAL THERAPEUTICS

**Watkins, T. J.: Treatment of Infected Wounds.**  
*J. Am. M. Ass.*, 1914, lxii, 1395.

By Surg., Gynec. & Obst.

The abuse of wounds caused the author to write this paper. His treatment is as follows:

An infected abdominal wound is covered with a hot, moist, non-irritating dressing of gauze. The gauze is kept moist with boric acid or normal salt solution. The dressing is covered by a protective layer of rubber tissue, oiled paper or silk, to prevent evaporation. Heat is supplied by a hot-water bag. This dressing is changed from one to three times daily, depending on the amount and character of the discharge. This treatment is continued until the redness, induration, active suppuration, or sloughing disappear; that is, until the wound assumes a healthy appearance. The edges of the wound are separated, and then drawn together by sterile strips of adhesive plaster and a dry dressing applied.

Sutures are rarely removed, except in instances in which they cut through the skin. The wounds are not probed or separated; no drainage material is inserted and no medication is used. No exception is made in cases of intestinal fistulae or abdominal sinuses.

The moisture is used solely to promote drainage. It favors drainage chiefly by preventing coagulation and desiccation of the discharge. The heat increases the blood-supply and hastens suppuration, and has some of the features of the Bier treatment. An extensive suppuration will drain through a very small opening if desiccation of the discharge is prevented. For example, in a recent case of extensive suppuration following an operation for a large ventral hernia, satisfactory drainage occurred through two small openings at the site of tension sutures.

Posture is at times used to promote drainage. Care is observed to avoid all procedures which would tend to disseminate the infection, such as probing, manipulation, separation of the wound, or use of rubber tubing, packing, irrigation, and the like. It has been known for a long time that the use of antiseptics injures the tissues more than it does the

bacteria. Aside from the destructive power of antiseptics and the dangers of dissemination of the infections by irrigation solutions, the force of the fluid mechanically removes some of the delicate reparative tissue.

Infection in cases of vaginal section usually results following extensive operations, especially when there is much retention of wound secretions. Prophylactic treatment is important, especially in regard to strict asepsis. The author has abandoned much of the post-operative treatment. The treatment of infection consists in elevating the head of the bed and applying hot moist dressings to the vulva. The advantages of this treatment are:

1. The patient is but little disturbed mentally or injured physically.
2. The wounds heal quickly, as there is little surface for repair.
3. The strength of the wound is relatively not much impaired in the absence of much sloughing.
4. The danger of secondary contamination is minimized.

EDWARD L. CORNELL.

### ELECTROLOGY

**Cumberbatch, E. P.: The Influence of the X-Rays on Some Cases of Persistent Suppuration.**  
*Lancet*, Lond., 1914, clxxxvi, 1392.

By Surg., Gynec. & Obst.

The author reports four cases: two of infective periostitis; one of probable hygroma of the forearm, subsequently infected; and one of tuberculous bursitis (prepatellar). Other cases are still under treatment. The four cases showed chronic suppuration, small in amount, and in superficial situations. The first case received full applications of X-rays at longer intervals; the second case received small applications at short intervals; and the third and fourth cases received medium applications at intervals of medium length. The dosage was measured by Sabouraud's method. The suppuration was stopped in all four cases.

In arresting the process of suppuration the X-rays do not act only, if at all, by destroying the pyogenic organisms. In experiments made to test the action of the X-rays upon cultures of bacteria the pyogenic organisms were not destroyed. The writer believes that the X-rays produce some local tissue reaction against the invading organisms, and at the same time some general reaction. In many of the cases that have been treated there has been considerable improvement in the general health, although in some of them the suppuration has not been arrested.

DAVID R. BOWEN.

**Bumm, E.: Further Experience with the Irradiation of Carcinoma** (Weitere Erfahrungen über Carcinombestrahlung). *Berl. klin. Wchnschr.*, 1914, li, 193.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Bumm reports his experience in the irradiation of 108 cases of carcinoma during a year and a half.



There was local healing in 3 to 5 weeks; in the beginning a clinical condition of irritation was present for 8 to 14 days. The local effect was wonderful, but not comparable with that of the cautery or caustics. Microscopically there was progressive destruction of cancer tissue, the cells of which were affected first and most markedly because they belong to rapidly developing new-growths and are young and tender, but connective tissue and muscle tissue were also affected by intensive action, showing hyaline degeneration and forming calluses, which in the neighborhood of cavities may cause strictures, perforations, and fistulæ. These changes were observed in the surrounding tissues after six months.

The permanency of the recovery could only be determined from specimens obtained by operation or at autopsy. The findings in six such cases are described. In three of the cases there were such small remnants that they could only be seen microscopically, and from which certainly no recurrence was to be expected; deep down in the three other specimens there were still foci from the size of a pea to that of a nut. All of the cases were very advanced carcinomata. There had been complete obliteration of the carcinomatous tissue to depths of from  $2\frac{1}{2}$  to  $3\frac{1}{2}$  cm.

Among the 108 cases, only 40 of which were operable, there have been only 15 recurrences; 10 inoperable cases recovered. This does not mean permanent recoveries, for the time of observation has not yet been long enough. He warns against applying doses of over 100 mg. for a very long time, for in spite of filtration they produce burns on the surface and progressive hyaline degeneration in the depths of the tissues; also rapidly increasing anæmia and fever as high as 40 degrees.

He describes his technique and says that 5 operable cases of carcinoma of the cervix were treated in this way without any injury; moreover, there was local recovery of an inoperable carcinoma with röntgen rays alone. A carcinoma of the cervix was irradiated abdominally only and there was an undoubted deep effect and injury of carcinoma cells at a distance of 9 cm. MONHEIM.

**Cole, L. G.: Röntgenocinematography of the Stomach and Cap.** *Am. J. Röntgenol.*, 1914, i, 212.  
By Surg., Gynec. & Obst.

The author gives the history of attempts to produce röntgenocinematographs of the stomach and describes in detail his own apparatus for this method of examination. He points out that the early so-called röntgenocinematography was nothing more than serial röntgenography, for only 13 röntgenograms were made in 22 seconds by the old method while the new apparatus is capable of making four röntgenograms per second.

The röntgenocinematographic apparatus is described in detail and illustrated with several cuts. It consists of a film-shifting mechanism with a counter weight, which is mounted under a lead-

lined table in a dark booth, suitable for perfect fluoroscopic examination. Above the mechanism and secured to the under surface of the table by sliding rails, is an iron frame which carries the exposed and unexposed films and an extra frame permitting the use of any of the standard cassettes. With this apparatus the gastric peristalsis may be seen fluoroscopically and at any time, by simply turning a crank; serial röntgenograms or true röntgenocinematographs can be made, all without disturbing the patient. The Coolidge tube is especially adapted for the work. The author states that serial röntgenography is of greater practical value in diagnosis and that röntgenocinematography is only worth while from a scientific standpoint.

WM. A. EVANS.

**Döderlein, A. and Von Seuffert, E.: Further Experience with the Mesothorium Treatment of Carcinoma** (Unsere weiteren Erfahrungen mit der Mesothoriumbehandlung des Carcinoms). *München. med. Wchnschr.*, 1914, lxi, 225.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In the past year about 180 cases have been treated in the clinic with the rays. There were many failures but some very significant successes. Among 153 cases of cancer of the uterus, all subjective and objective symptoms disappeared in 31 cases, 12 among them being inoperable. The results were unfavorable in recurrences. In cancer of the rectum and breast the results were not so good as in cancers of the female genitalia. Among the injurious by-effects there were high and long-continued fever (absorption fever) and burning and tenesmus in the rectum. In four cases a rectovaginal fistula developed, but it was uncertain whether it was the result of the cancer or the treatment. There is as yet no technique that can be applied to all cases. Filtration with brass covered with silver seems better than with lead. WÖSSNER.

**Müller, C.: Physical and Biological Basis of the Effect of Radio-Active Substances, Especially Mesothorium, and the Possibility of Substituting Röntgen Rays for Them** (Physikalische und biologische Grundlagen der Strahlenwirkung radioaktiver Substanzen, besonders des Mesothoriums und der Ersatz derselben durch Röntgenstrahlen). *München. med. Wchnschr.*, 1914, lxi, 134.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author discusses the deep effect of radio-active substances. He believes that, when the soft  $\gamma$ -rays are filtered out by the use of metals of high atomic weight, the value of the nearness of the source of the rays has been overestimated in the deep effect. He acknowledges the therapeutic value of the secondary  $\beta$ -rays produced by the filter as compared with the inactive  $\gamma$ -rays (Bragg's theory). He admits that he overestimated the depth of the effect of secondary irradiation; it is at most 1 cm., but there is a biological effect to a depth of 4 cm., not 7 cm. as he formerly believed. The cell toxin



choline, which is split off, is taken up by the neighboring tissues and has an effect. Where there are sound layers covering the tumor that must be spared, röntgen treatment is to be preferred, because there is danger of injuring the sound tissues by the secondary rays of radio-active substances. Tumors to which the radium can be immediately attached should be treated with it. Metals of high atomic weight should be inserted between the tumor and the radium for the production of secondary rays. He suggests the possibility of substituting the cheaper röntgen rays for radio-active substances, by means of suitable apparatus and tubes.

LOHFELDT.

### MILITARY AND NAVAL SURGERY

**Meyer, A. W.: Infection of Wounds in War; from Experience in the Balkan Wars, 1912-1913.** (Die Wundinfektion im Kriege. Nach Erfahrungen in den beiden Balkankriegen, 1912 bis 1913). *Arch. f. klin. Chir.*, 1914, ciii, 798.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Meyer, an assistant of Wilms, spent 11 months in the Bulgarian War. His observations are of special value for he not only had experience in the hospitals of Sofia, Philippopol and Dedegatsch, but also as an active military physician at the front. He believes with Reyher that the infection of wounds is almost always primary. Injuries with the smallest bullets and with the smallest openings that quickly closed up showed the severest phlegmons. The larger the opening made by the bullet, the greater the opportunity for primary external hæmorrhage, and for the discharge of the fluid from the wound, and therefore the less danger of infection. The larger openings in the meninges, pleura, peritoneum, and joints show a tendency to secondary infection.

Bacteriological examination of the infections was frequently made. They were mixed infections, staphylococci and streptococci prevailing. Examination could not be made for anaërobic bacteria. Tetanus was comparatively rare, but it was chiefly a secondary infection. The primary infection takes place from the bacterial content of the clothing. As the infection is generally primary, he does not think the package of dressings is of any very great value. It is too small to thoroughly guard against secondary infections. He thinks the German packet of dressings is as inadequate as the Russian. Every soldier must have two packets of dressings, one with two large, thick pieces of gauze, and another with two long calico bandages. He values the mastisol bandage, not for its bactericidal effect, but on account of its adhering to the dressings. All large wounds that are accessible to secondary infection he treats with balsam of Peru. In the treatment of infections he believes in early free incision, and does not believe that much can be accomplished by suspension and stasis.

In gunshot fractures he believes in active treatment. If with good fixation the secretion of pus does not stop in a few days, he makes a free opening and removes the detached fragments. This prevents troublesome fistulæ, with repeated discharge of sequestra, resection in continuity, and amputation. He does not attach much value to resection in continuity. He thinks extension in gunshot fractures, even of the thigh, is unnecessary. Fenestrated plaster casts, in his opinion, are the best dressing. He opens up infections of the joints, and has never seen good results from joint resection. He warns against waiting too long for amputations.

The erysipelas infections were severer than are generally seen in civil life, but they were mostly due to carelessness on the part of the staff. He does not think that pyocyaneus infection is so dangerous as Von Oettingen does. He believes that after the beginning of tetanus even amputation is without result, while prophylactic injections are successful; tangential shots of the skull should be trephined, but the patients should not be transported for two or three weeks. He treats shots in the abdomen conservatively, but believes there are cases that should be operated on if the external conditions are favorable.

He points out the advantage of fixation of the patient on the stretcher, and expresses the wish that physicians might be better instructed in the application of splints for fractures than they are at present.

FRANZ.

**Makkas, M.: Experiences and Impressions in War Surgery** (Kriegschirurgische Erfahrungen und Eindrücke). *Deutsche med. Wchnschr.*, 1914, xl, 231. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author took part in the campaign as staff physician of the Grecian army. In the first part of the expedition he was in the first military hospital, just back of the front, then in a field hospital just back of the besieging army at Janina, and then in a military hospital at Philippias. During the second war he had charge of a hospital at Saloniki. He discusses the organization of the Greek military medical service. He can see no particular difference between the rounded and pointed bullets; he found that both frequently remained in the body. The number of infections he observed was slight in comparison with those observed by other surgeons during this war.

He does not think much of the packet of dressings, since few soldiers make use of it, and he thinks most infections are primary, carried in with dirt from the skin or bits of garments. He gives a brief account of 1,615 wounds observed in the first war. He confirms Zöge von Manteuffel's views as to gunshot injuries of the skull, and advises early operation in tangential shots. He treats shots of the spinal cord and abdomen conservatively. He thinks the total mortality of the injured in the Grecian army was not more than 4 or 5 per cent.

COLMERS.



**Symposium: Sanitary Report of the Imperial Prussian Army, the 12th and 19th (1st and 2d Saxon) and 13th (Imperial Württemberg) Army Corps from Oct. 1, 1910, to Sept. 30, 1911. Prepared by the Medical Division of the Imperial Prussian Ministry of War (Sanitätsbericht über die königlich-preussische Armee, das xii und xix (1 und 2 königlich-sächsische) und das xiii (königlich württembergische) Armee-korps für den Berichts-zeitraum vom 1 Oktober 1910 bis 30 September 1911. Bearb. v. d. Medizinal-Abteilung des königlich-preussischen Kriegsministeriums). Berlin: Mittler & Son, 1913.**

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

This exhaustive report of the health conditions in the German army contains much of interest to the surgeon, because it deals with large numbers of cases observed by different surgeons in persons of about the same age and living under the same conditions. Because with soldiers it is necessary to pass judgment as to their capacity for service and as to when they should be invalidated, it follows that not only the immediate results are given, but that the cases are followed for a long time. Of the cases reported, 809 are luxations, 4,443 fractures, 393 gunshot wounds, 112 operations on the ear, including opening of brain abscesses and ligations of the jugular, 74 operations for empyema, 75 laparotomies, 1,137 operations for appendicitis, 626 operations for hernia, 14 resections, 21 exarticulations, 27 amputations, 31 strumectomies, 7 nephrectomies, 32 cases of opening of perinephritic abscess, 47 operations for tumors, and 701 other major operations.

**Intestinal occlusion.** Three cases directly due to inflammation of the appendix and peritoneum are not considered. Seven cases were operated on, with one death, two rendered capable of work; the rest recovered but were unable to resume work; 4 cases were ileus from strangulation. In three cases there was torsion of the colon, and once obstruction at the flexure which was overcome by pulling on the flexure. The following were noteworthy cases:

1. Meckel's diverticulum was the cause. The patient was a musketeer. A diagnosis of intestinal torsion from an unknown cause was made. Six hours after the beginning of symptoms operation was performed. First an oblique incision was made in the region of the cæcum, and large quantities of a turbid watery fluid were discharged. There was kinking of the appendix which contained a fecal fistula. The appendix was removed. As several coils of small intestine were completely collapsed they were followed up. Forty centimeters above the cæcum a looplike constricting band was found which proceeded from a loop of small intestine and ended at the umbilicus, a part of the small intestine being cut off by it. The cord was removed and proved to be a Meckel's diverticulum. The diverticulum, as far as the middle of it, was a cavity lined with mucous membrane; from there on it was a connective-tissue cord. After closure of the abdominal wall, the patient was capable of service.

2. Another case of ileus caused by Meckel's diverticulum.

3. A man was run over by a hay wagon. Operation performed 26 hours later disclosed volvulus of the small intestine on its axis. The volvulus was untwisted and the patient was able to return to service.

**Gunshot wounds.** In all there were 393 cases, of which 44 injuries with pointed bullets are of special interest, 33 of them being suicides, 3 attempts at suicide, and 8 accidents. Of the suicides, 23 were shots in the head, 9 shots in the breast, and one shot in the abdomen. Although the shots were at close range, in 8 cases the opening at which the bullet entered corresponded to the caliber of the bullet, and in one skull shot the exit was smaller than the entrance. Those cases are noteworthy in which whole sections of the brain were discharged through the wounds. One case was a shot in the occiput, one in the chin, and some — the number is not given — were shots in the mouth.

The first case seems typical. The shot entered  $3\frac{1}{2}$  cm. behind the right ear, crushed the left half of the head, and forced out the brain so that only the cerebellum remained. There was extensive destruction of the skull. A similar case was one in which the shot passed obliquely from the right posteriorly to the left anteriorly and swept the eye out of the orbit. Among the injuries with pointed bullets only the accident cases survived; among these there was one shot in the head at 1,000 meters distance. The shot passed through the skull and caused only a compound fracture of the frontal. Two cases were fractures of the thigh at 300 meters distance; the rest were slight injuries of the soft parts.

Among the 88 revolver and pistol shot wounds there were 48 deaths, 43 of them suicide. Two cases are cited: (1) A shot made an oblique oval opening in the right temporal. It passed from the left sylvian fissure toward the left anterior central convolution to the surface of the brain, recoiled from the skull, passed at almost a right angle downward and backward in the brain and stopped in the middle of the third left frontal gyrus. (2) The shot entered the right temporal, passed obliquely through both frontal lobes, rebounded from the left parietal, and was found in the left cerebral cortex. Among 22 injuries with Tesching's and Flobert's bullets there were 2 deaths. One was a shot in the head in a suicide case, the other an accidental shot in the breast. The Tesching bullet penetrated the lungs, the pericardium, the left pulmonary artery, the left auricle, left pulmonary vein and descending aorta. The wounds in the vessels and lung were irregular slits, 0.4 cm. long. One hundred and fifty-eight injuries with blank cartridges are reported. Of the 39 deaths, 38 were suicides; 21 were head injuries, 11 breast, and 1 abdomen.

The report shows clearly that the effect of blank cartridges at close range is terrible. There was total destruction of face and skull and of parenchymatous organs of the body cavities, and extensive laceration

of hollow organs such as the trachea and œsophagus, and the gastro-intestinal canal. Surgical operations were undertaken in some cases, but they were unsuccessful in all but one. In this case there were only small openings in the stomach and duodenum. The felt wad was at the root of the mesentery. The man was able to re-enter service. The thoracic wound of a suicide was especially interesting. The fourth and fifth costal cartilages were splintered; the lungs and pericardium were not injured, but the latter was filled with blood because the right auricle was ruptured and the anterior cusp of the bicuspid valve torn away. In the shots at close range there was an exit in only one case. In a blank cartridge shot at 10 cm. distance there was a compound fracture of the forearm, while in shots at over one-half meter distance there were no severe injuries to the skull, body cavities, or soft parts. It is significant that among the numerous blank cartridge injuries there was not a single case of tetanus, although prophylactic injections for tetanus were given in only 18 cases. This shows the salutary effect of the army regulation made in 1903 that the wadding of the cartridges should be sterilized with steam before being used.

*Contusions of the abdomen.* Among 26 cases, 16 of which were operated on, there were 5 injuries of the intestines — three fatal, 2 capable of service; 5 injuries of the spleen — 0 fatal, 1 capable of service; 3 kidney injuries — 2 deaths, 1 capable of service; 1 injury of the stomach — death; 1 injury of the liver — capable of service; 1 injury of the mesocolon and great omentum — capable of service. In 14 cases the cause was a kick by a horse; one rupture of the spleen was caused by a fall on the corner of a stool, and another by the patient catching his side arms in the spokes of a wheel and being thrown to the ground.

The following cases are of interest:

1. A patient run over by a wagon was not operated upon at first. On the eleventh day laparotomy was performed; two and one-half liters of fluid from a hæmatoma were emptied from the abdomen, one-half liter of blood and biliary fluid from the right pleural cavity was released by puncture. After that, several punctures of the right pleural cavity were made, and bile-like fluid was emptied out. Twenty-two days after the accident a second laparotomy was done. A cavity filled with bile-like fluid was opened between the diaphragm, liver, stomach, and ascending colon, which showed adhesions with the gall-bladder. After 6 weeks rib resection was performed

on the right, and a large cavity of the lobe of the liver opened which contained three-fourths of a liter of hæmatoma fluid; the opening communicated with the thoracic cavity through a tear in the diaphragm. The patient recovered.

2. The patient suffered from a kick in the right kidney region. On operation the upper pole of the kidney was found almost completely separated and there were several deep tears in the lower one and the kidney vessels were ruptured. Nephrectomy was performed and a tear three cm. long in the diaphragm was sutured. Death occurred after six days, there being symptoms of uræmia. On autopsy it was seen that the left kidney was absent, the left ureter extended only 1 cm. from the bladder and ended in a blind pouch.

3. Another patient was injured by a lance that had made an opening 2 cm. long in the duodenum. The opening was sutured. Recovery followed.

In spite of the very severe degree of their injuries, 6 of the patients were capable of reëntering service.

FRANZ.

**Podesta: Military Marine Statistics of the Japanese Sanitary Service in the Russo-Japanese War; Translation of the Japanese Sanitary Report** (Marineärztlich-statistische Betrachtungen über den japanischen Sanitätsdienst im russisch-japanischen Kriege. Nach dem Übersetzungen des japanischen Sanitätsberichtes). Veröff. f. a. d. Geb. d. Marine-Sanitätsw., 1914, viii, 3.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

A historical and statistical report is given showing that many died from injuries from mines and many were wounded from shots on the one hand, and few died from shots and few were injured from mines on the other. The effect of the mines was deadly both qualitatively and quantitatively, of the shots on the contrary only quantitatively. A troughlike appliance with a double curve made from light papier-maché is recommended as a means of transportation. It is made in three sizes. Hammocks are provided to prevent drowning. The author proposes that the haversacks be provided with thin waterproof silk or rubber covers in order to keep their contents dry; and to add to the contents a flannel garment, a package of dressings, and a supply of food. In order to make it possible more easily and more frequently to save the firemen and others who are endangered by the sudden collapse of machine guns, it is necessary that information of the threatened disaster be given early. ZUR VERTH.



## GYNECOLOGY

### UTERUS

**Jansen, H.: Myoma and Carcinoma of the Body of the Uterus** (Myom und Korpuscarcinom am Uterus). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 207.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The earlier idea that a carcinoma may arise from a fibroma of the uterus has been proved false. The author believes from research by Hitschmann and Adler, Iwase and Frankl that myoma may influence the origin of carcinoma of the body of the uterus, in the sense that myoma may produce changes in the endometrium that favor the development of carcinoma. The myoma does not produce glandular hyperplasia of the mucous membrane which can be regarded as a preliminary stage of carcinoma, as has often been assumed. The hyperæmia of the endometrium that always accompanies myoma is the essential point. It is the expression of a state of chronic irritation, which, with the addition of other predisposing and thus far unknown causes, favors the development of carcinoma of the body of the uterus. The statistics from autopsy material are more important in the settling of this question than pathological anatomical investigations.

In the course of 18 years (1895-1912) at Mellin's Sanitarium there were 459 cases of myoma of the uterus, 306 of which were operated on, and 13 of which were complicated with carcinoma of the fundus; that is, carcinoma was found in 2.8 per cent of the total number of cases and in 4.25 per cent of those operated on. This is somewhat higher than the earlier statistics (Piquand 1.5 per cent, Winter 1.2, Haulstein 4.1, and Martin 3.8). The proportion of carcinoma of the body to carcinoma of the cervix (according to Winter, 1:15) is very markedly increased in the myomatous uteri in favor of carcinoma of the body (Winter 1:0.5, Hallauer 1:0.38, Kruger 1:2.5). The author comes to the conclusion that myoma undoubtedly favors the development of carcinoma of the body of the uterus. RENNECKE.

**Werner, P.: Carcinoma in the Uterus and Adnexa at the Same Time** (Über gleichzeitiges Vorkommen von Carcinom im Uterus und in den Adnexen).

*Arch. f. Gynäk.*, 1914, ci, 725.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Billroth's demand for a certain diagnosis of multiple primary tumors is too exacting; multiple primary tumors do not necessarily have a different structure, the matrix of the individual tumors can often no longer be distinguished, and it is impossible to always determine the metastases for each tumor. The author's conception of metastases is the same as that of Schottlaender.

The report for 5 years at the second gynecological clinic included 15 cases in which the uterus and adnexa were carcinomatous; 10 cases in which the tumors were derived from another; 3 in which they were independent; and 2 doubtful cases.

The cases were as follows: (1) Primary papillary carcinomatous cystadenoma with retrograde metastases in the uterus. (2) Papillary glandular carcinoma of both ovaries, lymphatic metastases in the myometrium, metastases in Douglas' pouch. (3) Papillary carcinomatous cystadenoma with metastases, apparently from implantation, on the wall of the uterus; yet their lymphatic origin was afterward demonstrated. (4) Papillary glandular carcinoma of the right ovary and undoubted implantation metastases on the uterus. (5) Carcinomatous glandular cystadenoma of the ovary, involving the uterus by contiguity. (6) Carcinomatous papillary cystadenoma on the right with direct proliferations on the tube, the uterus, and the left ovary. (7) Flat epithelial-celled carcinoma of the cervix with lymphatic metastases in the left tube. (8) and (9) Adenocarcinoma of the body of the uterus with transmission to the tube by continuity. (10) Carcinoma of the body of the uterus and fungus tumor in the ampulla of the right tube which was regarded as a true mucous membrane metastasis since no lymphatic dissemination could be demonstrated. (11) Carcinomatous glandular proliferating cystadenoma in the right ovary, a papillary cystadenoma on the left and an adenocarcinoma of the uterus. No carcinoma in the blood or lymph-vessels. (12) Carcinomatous papillary cystadenoma of the right ovary and the right tube and beginning flat epithelial-celled carcinoma in the cervix. (13) Exophytic adenocarcinoma of the body of the uterus and carcinomatous papillary cystadenoma, partly pseudomucinous, of the right ovary. (14) Exophytic carcinoma of the uterus and adenocarcinoma of the ovary with abundant proliferation, probably independent of the other but of almost the same structure. (15) Adenocarcinoma of the uterus and tube, probably independent, but not certainly so.

None of the cases was diagnosed as a double tumor.

R. SCHRÖDER.

**Veit, J.: Principles of Our Treatment of Cancer of the Uterus** (Grundsätze unserer Behandlung des Uteruskrebses). *Prakt. Ergebn. d. Geburtsh. u. Gynäk.*, 1914, vi, 149.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The operation for cancer of the uterus should be limited to those cases that are favorable in every

way. But it seems that even these if irradiated with sufficient material can be cured in about the same time as by operation. In Germany there are no cases showing permanent results from irradiation after five years or more, but some French authors seem to have such results. The quickness and sureness of the recovery in cancer treated by irradiation depends on the amount of radio-active material available and on how early the case is treated. Failures are to be explained by the fact that unsuitable cases are treated. Cases in which the general health is involved to such an extent that there is marked cachexia should not be treated. It seems possible by irradiation of the primary focus to obtain retrogression in the lymph-glands. The irradiation of swollen lymph-glands without irradiation of the primary focus does not seem to produce any results.

ADOLPH.

**Weinbrenner, C.: Treatment of Genital Carcinoma with Mesothorium** (Die Behandlung der Genitalcarcinome mit Mesothorium). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 181.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The work contains a further contribution to the experience with mesothorium treatment. The author reports 32 carcinomata and 2 cases of climacteric hæmorrhage which he treated from July 1 to Dec. 1, 1913, with 144 mg. active radium bromide distributed over an area of 140 sq. mm. No röntgen irradiation was used. The 8 most successful cases are described. Regularly after each irradiation there was a fall of about 1,000,000 in the erythrocyte count; after four days the blood picture became normal again and then the irradiation was continued.

The changes which appear so soon in the vessels cause the author to attribute the quick changes in the parenchyma of the cancer to the direct effect of the irradiation in causing disturbances of nutrition in the vessels of the region. In one case he observed kinking of the ureter and stasis of the urine in the kidney pelvis, caused by distortion of the bladder from too sudden contraction of the crater of the carcinoma and the vault of the vagina.

MONHEIM.

**Von Graff, E.: Effect of Pregnancy on the Growth of Malignant Tumors** (Über den Einfluss der Gravidität auf das Wachstum maligner Tumoren). *Wien. klin. Wchnschr.*, 1914, xxvii, 7.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author tried to determine experimentally whether pregnancy hastens the growth of malignant tumors. Rats were used as experimental animals. Seven experiments showed that pregnancy was not favorable to the growth of the tumors. Of course the results of these experiments cannot be held to apply to human tumors, especially carcinoma of the uterus, as the experiments were with implanted tumors outside the genital system. But it indicates that the question of the unfavorable effect of

pregnancy on the late results of radical operation for cancer of the uterus, even clinically, is not yet unanimously decided.

BRUNO WOLFF.

**Béclère: Röntgen Treatment of Myomata** (Die Röntgentherapie der Myome). *Strahlentherap.*, 1914, iv, 134.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The treatment was tried on 6 non-palpable myomata with hæmorrhage, 60 myomata with hæmorrhage, besides 3 with normal menses and 2 who had passed the menopause; in 36 the tumor could be felt above the pelvis. The ages varied from 39 to 50 years. The results were: Appearance of the menopause and marked decrease in the size of the tumor. In 2 cases there were no results. The author believes that the röntgen rays affect the fibromatous tissue itself, as the decrease in size preceded the appearance of the menopause, and myomata developing after the beginning of the menopause decreased under röntgen treatment. In each patient a strip of skin 1 cm. broad in the median line was protected in case future surgical operation should be necessary.

MOHR.

**Gauss, C. J. and Krinski, B.: Mesothorium Treatment of Myomata and Metropathies** (Die Mesothoriumbehandlung der Myome und Metropathien). *Strahlentherap.*, 1914, iv, 440.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The authors assumed that only the gamma rays of radio-active substances were effective in gynecological deep irradiation, and carefully carried out animal experiments which confirmed their hypothesis. The same thing is true as to the effect of both radium and mesothorium on the female genitalia.

The basic idea of the authors is to use the highest possible dose in a unit of time, so long as this is possible without burning the healthy tissues. Every preparation is "biologically measured" on the body of the patient; that is, the erythema dose of the radio-active preparation is determined. Fifty milligrams of mesothorium are used in a gold capsule 1.2 mm. thick, covered with a thick enough layer of rubber to avoid secondary rays. This is placed in the vagina 2 or 3 times for 24 hours, and then a rest of two and one-half to three weeks is given. When erythema appears, treatment is stopped until it disappears. All myomata were irradiated, including the intra-cervical ones and those with concomitant disease of the adnexa. Age and anæmia were not taken into consideration. The results were very satisfactory, amenorrhœa persisting over six months, the tumor almost completely disappearing in all cases except one, and decreasing to half of the original size in that one. There were marked symptoms of the menopause in only 3 per cent of the cases. Mesothorium is to be preferred to röntgen treatment in this respect. The effect can be hastened by combined mesothorium-röntgen treatment. Recovery generally took place after three röntgen treatments and two applications of mesothorium.



The combination is very useful in cases where recovery is slow with röntgen treatment alone. The injurious by-effects are discussed: vomiting, slight dizziness with marked anæmia on leaving bed at the close of the treatment, tenesmus of the bladder in only two per cent of the cases, no severe injury to the tissues when the right filtration was used. In markedly anæmic patients the danger of thrombosis may be avoided by rest in bed during the treatment. Röntgen treatment is given the preference in myomata and metropathies only on account of its cheapness; mesothorium should always be used in malignant tumors, or sometimes, in complicated cases, a combination of röntgen and mesothorium treatment.

LOHFELDT.

**Roy, J. E.: Abscesses of the Wall of the Uterus, and Their Treatment** (Les collections suppurées de la paroi utérine et leur traitement). *Thèses de doct.*, Par., 1914. By Journal de Chirurgie.

In 1906, 41 cases of abscess of the wall of the uterus were published. Roy adds several new ones. These abscesses are generally located on the posterior surface of the uterus or in the region of the cornua. They may develop toward the mucous or toward the serous covering, in the latter case involving the danger of serious peritoneal complications. The etiology may be puerperal infection, gonorrhœa, or traumatism. The symptoms are variable and not very characteristic. Abdominal palpation generally reveals pain over the uterus; an abscess of the vaginal portion will be revealed by the speculum; sometimes the finger introduced into the cervix reveals a submucous abscess. Bimanual examination may show an abscess, co-existing often with an increase in the size of the uterus. Diagnosis is almost impossible. Pyosalpinx is generally diagnosed.

Uterine abscess may often be prevented by asepsis during and after labor and by reducing the number of obstetrical examinations. After they have developed they can rarely be excised through the vagina. Vaginal hysterectomy in such cases has given a mortality of 75 per cent. Laparotomy is to be preferred. If the abscess is solitary and there is no disease of the adnexa, it may be simply evacuated and drained through the abdominal wound. This method gives a mortality of barely 5 per cent. Hysterectomy should be performed if the patient has passed the menopause, if there are multiple abscesses, or if there are lesions of the adnexa. Abdominal hysterectomy for uterine abscess has given a mortality of 16.66 per cent.

SALVA MERCADÉ.

**Adler, L.: Causes and Treatment of Hæmorrhage of the Uterus** (Über Ursachen und Behandlung von Uterusblutungen). *Med. Klin., Berl.*, 1914, x, 183.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The source and cause of the bleeding should always be determined for the purpose of deciding upon

treatment. An accurate history is more valuable than physical findings, especially in extra-uterine pregnancy. The history is less valuable in cases where, instead of the menses or before the menses, a slight hæmorrhage extending over a long time appears. Conservative treatment must be rejected in extra-uterine pregnancy.

The author then reviews his and Hitschman's study of endometritis. Glandular and interstitial endometritis alone do not cause hæmorrhage; the adnexa, especially the ovary, must be involved, or there must be retrodeviation of the uterus. And in chronic metritis the menses are apt rather to be scanty; there is no characteristic hæmorrhage. The fact that the ovarian function regulates the menses, that in adnexitis there is irregularity of the menses only when the ovary is involved, that oligomenorrhœa occurs in atrophy of the ovaries, and cessation of the menses after castration, lead to the conclusion that severe hæmorrhage must be dependent on disturbances in function of the ovaries. A polypous, hyperplastic uterine mucosa or atony of the uterine musculature may favor menorrhagia. Its appearance in chlorosis, Basedow's disease, Addison's disease, and myxœdema, is probably due to disturbances in the internal secretion of the ovary. In many patients the coagulation time of the blood is also increased.

The hyperæmia of the pelvic organs caused by sedentary life, corsets, constipation, and masturbation causes menorrhagia, rather than metrorrhagia. It is well known that disturbances in menstruation may also be caused by psychic stimulation, general diseases, and circulatory diseases. The change in the conception of menstrual disturbances has influenced treatment.

Curettage should be employed only for the removal of remnants of abortion, as a means of diagnosis for suspected malignancy, and for polypous, benign hyperplastic mucous membrane. In gonorrhœal endometritis curettage is useless, and even dangerous, especially if there are inflammatory tumors of the adnexa; if palliative treatment fails and the hæmorrhage does not stop, radical operation should be performed. Curettage in myoma is dangerous. In the hæmorrhage of puberty, curettage does not stop the bleeding; these patients often have infantile uterus or status thymolymphticus, and other treatment is required.

The menses are often improved in the menopause and in young girls by rest in bed, change to a high altitude, chalybeate baths, rough food, and ergot treatment. The injection of 1 ccm. of pituitrin subcutaneously for five days is effective; three to four months' administration of mammin every year is also recommended. Calcium is useful only if coagulation is defective; serum should be avoided on account of anaphylaxis; and tamponing the vagina is a last resort. The röntgen treatment should be used only in carefully selected cases. There should be constant control by a gynecologist of all cases of myoma or other genital hæmorrhages



treated by röntgen rays. Radium treatment cannot yet be recommended for hæmorrhage from benign tumors.

VON MILLNER.

**Clark, P. S.: Glandular Extracts in Menstrual Disorders.** *Clinique*, Chicago, 1914, xxxv, 256.

By Surg., Gynec. & Obst.

This paper is based upon experiments which have been carried on in the use of the extracts of some of the glands of internal secretion at Hahnemann Medical College.

Formerly it was believed that the relationship between the different functions of the genital organs with each other, and with numerous other functions, was due exclusively to the central nervous influence. It has been proven more recently that the genital organs influence the development and function of distant tissues and organs chiefly by means of their internal secretions, i. e., by chemical agents (hormones). Thus in menstruation, the ovaries secrete into the blood certain substances (hormones) which cause a congestion of the uterus and its mucosa; the uterine glands, in the presence of hyperæmia, begin to excrete their mucus, and this mucus contains a digestive ferment, trypsin. The trypsin, containing mucus, flows out onto the surface and digests off the superficial endometrium — the so-called swollen cell-layer — the smaller capillaries are also opened and menstruation takes place. The trypsin content of the mucus mixes with the blood and destroys the fibrinogen, hence normal menstrual blood does not clot.

The influence of the internal secretion of the ovaries upon the breasts and thyroid gland is reviewed.

Amenorrhœa, or scanty menstruation, due to functional inactivity of the ovaries, to ovariectomy, to X-ray influences, or to destruction of the ovarian function by infectious diseases, and accompanied by the manifold disturbances of the nervous and circulatory systems, which usually result from the absence of the hormones, are all benefited or entirely relieved by the administration of ovarian or lutein extracts. In a woman 26 years of age, whose uterus, tubes, and ovaries were removed on account of the results of severe inflammatory disease, one of the ovaries was transplanted into the cellular tissue beneath the breast. It is too early to state just what the results will be, but the hope is to prevent the artificial menopause with its cardiovascular storms, atrophy of the vulva and vagina, and, most of all, the mental changes which at times lead these patients to suicide or the insane asylum.

The woman who is gradually gaining in weight, whose menstrual periods are farther apart and more scanty, and who is "suffering with nerves," may be deficient in ovarian, thyroid, or pituitary secretion. The pituitary gland, when reduced in activity, gives rise to adiposity and sexual infantilism in addition to the well-known changes in the skeleton and skin.

In many cases of perversion of the internal secretion it is necessary to resort to the therapeutic

test, namely, to administer first one and then the other of the extracts until it is determined which is indicated. Many cases of so-called neurasthenia are due to hyperthyroidism, secondary to ovarian insufficiency, and the use of lutein or ovarian extracts offers in some cases a good prospect of benefit. The disturbances of the circulation and of the mind and of the nervous system occurring at the menopause, whether artificial or natural, are favorably influenced by the administration of ovarian substance or lutein extract.

Cases of menorrhagia and metrorrhagia without anatomical basis are benefited at times by the use of lutein extract.

The use of mammary extract has been tried also in some cases of menorrhagia and metrorrhagia, and at times with marked results, but in others no results whatsoever. The question whether the mammary gland has an internal secretion or not is open to a good deal of doubt, but Clark has been led to try it by the fact that in many instances a woman suckles her babe beyond the usual time with the idea of preventing the return of the menses and thus avoiding conception. The latter hope, of course, does not hold true, but the former has some basis in fact.

If it is a fact that menstruation can be postponed in many cases by prolonged lactation, it would rather point to an internal secretion from the breasts.

**Schröder, R.: Condition of the Uterine Mucous Membrane at the Time of Menstruation**

(Über das Verhalten der uterussschleimhaut um die Zeit der Menstruation). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 3.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

This follows the author's atlas, "The normal cycle of the uterine mucous membrane," and takes up the question of whether there is a discharge of the mucous membrane at menstruation and if so to what extent. The material is described in detail. The thickness of the mucous membrane during the intermenstrual period is markedly increased over that of the post-menstrual period. For the last few days before menstruation there is a definite division into compact, spongy, and basal layers. Shortly before the beginning of bleeding there are figures showing the disintegration of nuclei and leucocytosis. During the early part of the bleeding the compact and a large part of the spongy layer are destroyed, partly by autolysis and partly by phagocytosis.

The beginning of the disintegration from the internal os, as described by Williams, could not be demonstrated. Probably the same influences that cause the degeneration of the corpus luteum at the beginning of the menstrual flow also have a primary degenerative effect on the mucosa of the uterus. The author studied 32 uteri and specimens from 20 curettages without much regard to the genital diseases of the subjects. If the function of the ovary and corpus luteum was undisturbed and there were



no marked inflammatory changes in the mucosa, the stages of the cycle progressed in about the same way.

Schröder lays great stress on accurate data; there are individual variations in the agreement in time between the anatomical and clinical menstruation, but the difference in time is short. In order to avoid post-mortem changes the material in all cases was fixed during or immediately after operation. As a result of the trauma in curettage, subepithelial hæmatomata could be found at all stages of the cycle. Schultze's oxydase reaction showed that pyknosis was the result of disintegration of glandular epithelium and stroma cells, and not of the destruction of wandering leucocytes. The regeneration forms of the remaining epithelium and the clearly demonstrable reconstruction of the surface, indicate a preceding loss of mucous membrane. There is a diffuse infiltration of leucocytes throughout the mucous membrane, with the exception of the deep basal layer. Micro-organisms were never demonstrated; and the infiltration of leucocytes was seen only at the time of menstruation. Substances set free by the beginning disintegration of the mucous membrane or biochemical processes in the cells probably have a chemotactic effect on the leucocytes.

HÖLDER.

**Bandler, S. W.: Constitutional Dysmenorrhœa.**  
*N. Y. M. J.*, 1914, xcix, 962.

By Surg., Gynec. & Obst.

This article is essentially a discussion of the interrelation of the secretions of the ovary, the thyroid and the "uterine lining," and of treatment for disturbed balance of these relationships.

It is Bandler's belief that the idea of interrelation and antagonism between the ovary and the thyroid appears to be generally accepted.

He says the reaction of the individual to the premenstrual cumulative influence of the ovarian secretion follows different types. Some have no warning of approaching menses, some have local phenomena only, and a goodly proportion have a constitutional reaction of either irritation or depression. The reasons for these different types are to be found in the character of the ovarian secretion, in its relation to other secretions, and in the sensitiveness of the nervous organism that is being played upon. While in some women the thyroid is scarcely stimulated at all by the ovarian secretion, in others the slightest ovarian premenstrual activity is at once followed by a response of the thyroid in the form of actual or relative overactivity. The reaction of an individual to the premenstrual phase is a fair indication of the sensitiveness of that patient's nervous system.

Preceding menopause, constitutional dysmenorrhœa becomes frequent. Whatever the cause, the administration of thyroid extract may serve as an aid to diagnosis. In the case of hyperthyroidism the premenstrual annoyances will be accentuated, whereas in a hypothyroid or hyperovarian type it would be a specific. Some of the hyperthyroid

cases absolutely require opium or belladonna for their typical extreme restlessness.

The author believes that the instability of the relation which the thyroid bears to the ovaries and uterus makes the thyroid more susceptible to the causes which produce these same diseases in a far smaller proportion in men.

The monthly play produced on a woman's nervous system by the premenstrual ovarian stimulation causes, either of itself or, in many cases, through an exaggerated response on the part of the thyroid, a group of nerve phenomena like those in hyperthyroidism to which may be given the term "constitutional dysmenorrhœa." Bandler classifies these patients under four types: (1) The phlegmatic or depressed cases; (2) the nervous, excitable cases; (3) those that change from hypo- to hyperthyroidism as the menses approach; and (4) a very common type of mild hyperthyroidism.

The author believes that alcohol, coffee, tea, iodides, and arsenic stimulate the thyroid; and that it is quieted by rest, freedom from sexual stimulation, correction of pelvic congestion and pains, milk diet, ergot, glycerophosphates, and especially bromides, opium, and belladonna.

The "uterine lining" acts on the ovaries and is acted on by them. If menstruation can be stopped, and in these patients the ovaries be left, the over-secretion of the ovaries and the cyclic response of the thyroid seem to be markedly weakened and usually removed, and the reaction of the ovaries to the endometric hormones is done away with. In a nutshell, hysterectomy is Bandler's final choice.

The effects of the hypophysis on the sexual apparatus the author believes to be very slow and not cyclic.

E. A. BULLARD.

**Thwaits, J. A.: Hæmato-Therapy in a Case of Menorrhagia of Puberty.** *Med. J. South Africa*, 1914, ix, 232.

By Surg., Gynec. & Obst.

The author reports a case of menorrhagia occurring in a girl of 15. During the previous six months the patient had not been free from the loss of blood longer than 8 days at a time. Uterine drugs had been administered without effect. Rectal-bimanual examination revealed no pelvic abnormality.

Ten cubic centimeters of human serum from the patient's mother were given subcutaneously. Immediate improvement resulted. After an interval of 12 days, menstruation returned and lasted 8 days. On the second menstrual day 30 ccm. of serum were injected, since which time the patient has been quite normal.

EDWARD L. CORNELL.

**Nádory, B.: Fascia Lata Implantation in the Treatment of Genital Prolapse in the Female** (Fascia-lata-Implantation zur Heilung des weiblichen Genital-prolapses). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 440.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Nádory recommends the implantation of a strip of fascia in the place of the wire ring recommended



by Freund in recurrence after prolapse operations and in old women, instead of total extirpation. The procedure is as follows: A strip  $1\frac{1}{2}$  cm. wide and 25 cm. long is cut from the fascia lata of the thigh and the wound sutured. The strip of fascia is kept in warm physiological salt solution. A slightly curved, not quite blunt needle is inserted in the raphe of the perineum near the lower end of the wall of the vagina, and is carried upward along the edge of the right labium minor until it comes out below the bulb of the urethra. The strip of fascia is drawn through with silk threads. The same procedure is repeated on the other side. The two ends of fascia are then crossed and pulled upon until the entrance to the vagina seems narrow enough, and then they are fixed to the vaginal wall.

Nádory recommends as an improvement on this method that the ends of the fascia be crossed and with the aid of a Bumm hebstectomy needle carried up along the posterior surface of the symphysis and both ends fastened in the skin of the mons veneris. This forms a figure eight. Recently he has experimented with substituting the fascia from cattle for fascia from the patient's thigh. This was previously hardened in 5 per cent formalin and sterilized for 15 minutes with 70 per cent alcohol vapor. In one case such a strip was successful.

HÜFFELL.

**Weibel, W.: Operative Treatment of Recurrences after the So-Called Vesicovaginal Interposition of the Uterus** (Die operative Behandlung der Rezidive nach der sog. Interpositio uteri vesicovaginalis). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1808. By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

Recurrences occur after vesicovaginal interposition of the uterus, either from the cervix moving forward, under which condition the body of the uterus may or may not be loosened from its fixation, or from the fundus of the uterus falling forward. The cause of the first condition is relaxation of the sacro-uterine ligament and a weak perineum. The cause of the latter is poor fixation of the fundus, relaxation of the anterior vaginal wall, and a weak perineum. A simple perineorrhaphy is insufficient for treatment. Formerly the sacro-uterine ligaments were shortened by the abdominal route and a perineorrhaphy performed. Now, after dissecting the vagina from the uterus and shortening the sacro-uterine ligaments vaginally, or, better, abdominally, the uterus is sutured into the cleft in the levator by Wertheim's new method.

WAGNER.

**Lenormant, C. and Petit-Dutailis, D.: High Amputation of the Cervix Combined with Colpectomy — Bouilly's Operation — in the Treatment of Prolapse** (L'amputation haute du col utérin combinée à la colpéctomie — opération de Bouilly — dans le traitement des prolapsus génitaux) *J. de chir.*, 1914, xii, 425. By *Surg., Gynec. & Obst.*

This operation is indicated in cases of prolapse with elongation and hypertrophy or inflammation

of the cervix. It comprises a supravaginal amputation of the cervix, a colpectomy of the anterior wall of the vagina, and a posterior colpoperineorrhaphy. It overcomes the hypertrophy of the cervix and causes a certain degree of involution and atrophy of the body of the uterus, retracts the enlarged vagina, both laterally and anteroposteriorly, and reconstructs the perineal support of the genitalia. In addition to the usual preparation it is often advantageous to do a curettage.

*First step.* The cervix is seized by the anterior lip with traction forceps and drawn as far as possible outside the vulva, which has the effect of stretching the exuberant anterior wall of the vagina. Four grasping forceps are attached to this anterior wall to mark the corners of the flap to be resected; these forceps should be placed carefully (Fig. 1). The two lower ones are attached to the cervix itself at the insertion of the vaginal wall near the external orifice, exactly at the union of the anterior and posterior semicircumference. The two upper ones are placed directly above them and about a finger's breadth below the urinary meatus. With the point of a bistoury a transverse incision is traced, passing below the two lower forceps; then two vertical incisions are carried upwards from the ends of it, outside the forceps up to the upper ones, so that a large rectangular flap is marked out, including almost all of the anterior wall of the vagina. This flap is then dissected and separated from the anterior surface of the uterus. This dissection is facilitated by traction on the two lower forceps. Below and on the sides the dissection is performed with scissors, care being taken never to lose contact with the uterine tissue, then when the plane of cleavage between the uterus and bladder is reached, the dissection can be finished with the finger covered with a compress. The dissection finished, the neck of the uterus is denuded to the isthmus, and the flap, holding only by its base, can be lifted: the bladder can be seen adherent to its under surface.

*Second step.* The flap is held with forceps and the bladder separated from its under surface. This separation is accomplished with scissors; some care is necessary to avoid injuring the bladder, but there is no serious difficulty. It is accompanied by moderate hæmorrhage which can easily be controlled by pressure, or if necessary by applying forceps to a few arterioles. When the bladder is completely freed and pushed up, the vaginal flap is cut transversely at its base below the two upper forceps.

*Third step.* It is advisable at this time to ligate the cervical branches of the uterine artery on each side. They form a group of three or four small arteries spreading out in a fan shape on the sides of the cervix and the dome of the vagina; they are the source of hæmorrhage when the cervix is amputated. Bouilly and Loewy do not make this a separate step in the operation but seize them and ligate them as they are cut, while the cervix is being amputated;



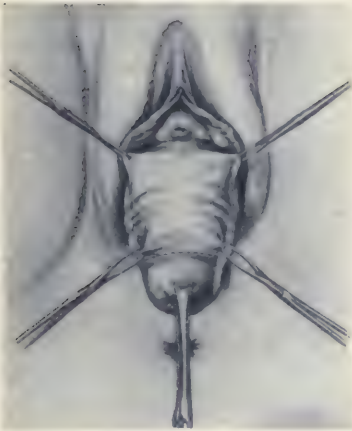


Fig. 1.

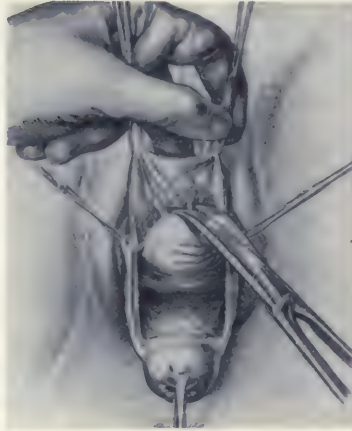


Fig. 2.

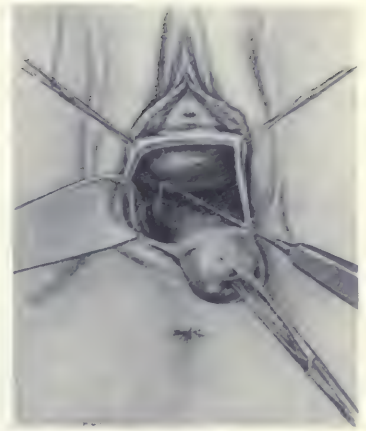


Fig. 3.

Fig. 1. (Lenormant and Petit-Dutaillis.) Beginning of first step. The cervix is drawn down; four forceps mark the corners of the anterior vaginal flap. The dotted line outlines the flap.

Fig. 2. (Lenormant and Petit-Dutaillis.) End of the first step. The dissection of the anterior vaginal flap is completed; the flap is lifted, leaving the cervix denuded;

the bladder is adherent to the under surface of the flap. Second step. The bladder is separated from the anterior vaginal flap.

Fig. 3. (Lenormant and Petit-Dutaillis.) Third step. Dissection of the bladder and resection of the anterior vaginal flap are finished; the needle is passed under the cervical branches of the uterine artery on the sides of the cervix.

but it seems preferable to ligate them *en masse* and proceed with the cervical amputation without hæmorrhage. The uterus is pulled toward the opposite side, a narrow retractor inserted, a curved artery needle threaded with No. 1 catgut passed under the whole group of arteries and the fibrous tissue which surrounds them and they are ligated *en masse*.

*Fourth step.* With two cuts of the scissors the cervix is split into halves, an anterior and a posterior; then the anterior one is detached by transverse section at the isthmus; if the ligation of the cervical arteries has been correctly performed there will only be insignificant hæmorrhage, and the slight oozing which still takes place will be completely stopped by the suture of the vagina to the cervix



Fig. 4.



Fig. 5.



Fig. 6.

Fig. 4. (Lenormant and Petit-Dutaillis.) Fourth step. The cervical branches of the uterine are ligated on each side and the amputation of the anterior lip of the cervix is accomplished; the first thread of the anterior vaginocervical suture is passed.

Fig. 5. (Lenormant and Petit-Dutaillis.) End of the fourth step. The anterior vaginocervical suture finished.

Fig. 6. (Lenormant and Petit-Dutaillis.) Beginning of the fifth step. The posterior lip of the cervix is held up with forceps; the dotted line shows the posterior incision.

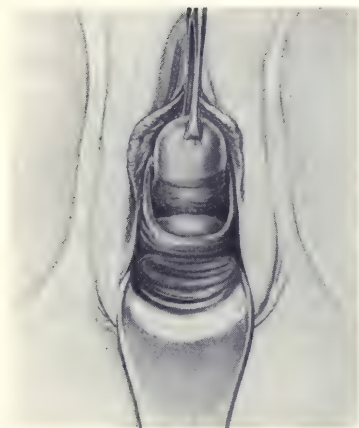


Fig. 7.

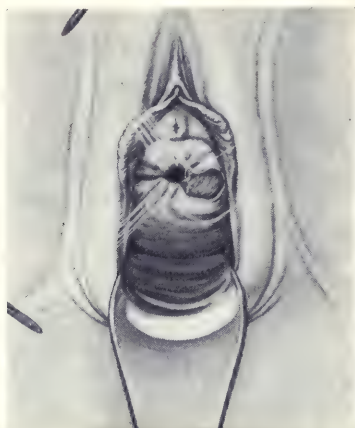


Fig. 8.

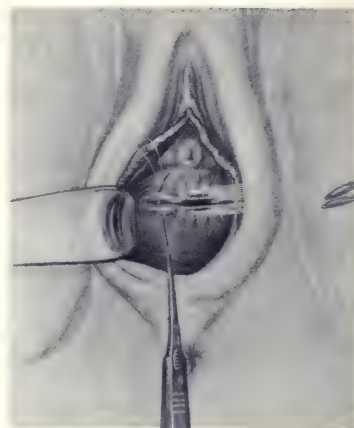


Fig. 9.

Fig. 7. (Lenormant and Petit-Dutaillis.) End of the fifth step. The dissection of the posterior part of the cervix is finished; at the bottom of the wound the peritoneal cul-de-sac can be seen intact.

Fig. 8. (Lenormant and Petit-Dutaillis.) Sixth step. Amputation of the cervix is finished; the posterior vagino-cervical suture.

Fig. 9. (Lenormant and Petit-Dutaillis.) End of the sixth step; placing of the sutures at the angle.

which is to follow. The anterior cut surface of the vagina is seized with a forceps, applied to that of the uterus and fixed with a suture. This should be done with great care, for there must be exact coaptation of the uterine and vaginal mucous membrane. The needle passes entirely through the vagina and through the internal half or two-thirds of the cervix. The needle must be rather sharply curved; too straight a needle has a tendency to cut the cervical tissue. Bouilly and Loewy recommend an overcast stitch; or there may be several separate sutures very close to each other, generally four or five, which should be tied immediately. The important point is the exact coaptation of the mucous surfaces. When this suture is finished all the cut surfaces are covered and the anterior half of the future cervical orifice is reconstructed. The threads are kept long to serve as a means of traction in future steps.

*Fifth step.* The posterior half of the cervix is seized with forceps and lifted up, while a short, broad retractor compresses the commissure of the vulva and the posterior vaginal wall; the posterior surface of the cervix and the vagina are thus made easily accessible. The extremities of the anterior incision are found on the sides of the cervix and united by a transverse incision at the insertion of the vagina on the cervix. Then the posterior surface of the cervix is denuded. The retro-uterine peritoneal cul-de-sac is reached, for it is often lower than normal; an effort should be made to spare it and if it is involuntarily incised it should be closed immediately with catgut sutures. It is not necessary to resect the vaginal wall here, for its shortening and retraction will be accomplished by the colpoperineorrhaphy which finishes the operation.

*Sixth step.* When the posterior half of the cervix has been denuded to the isthmus it is removed by a transverse incision with the scissors. The supravaginal amputation of the cervix is then finished. It only remains to suture the posterior vaginal and uterine surfaces in the same manner as the anterior ones, and the new cervical orifice is complete. But there is generally an opening at the angle where the anterior and posterior halves unite; therefore the union should be completed by the insertion of two or three sutures. A narrow retractor is inserted in the side to be sutured and the uterus drawn toward the opposite side by the long ends of the previous sutures.

*Seventh step.* The uterus is pushed up with a tampon; then the posterior wall of the vagina is stretched out with grasping forceps, and one of the classical methods of colpoperineorrhaphy performed — the authors prefer Héger's. A very large triangular excision of the vaginal mucous membrane is made and after careful hæmostasis it is sutured with catgut. The dressing is the same as that for any colpoperineorrhaphy. As the sutures are all catgut, with the exception, sometimes, of the perineal sutures, removal is unnecessary. A. Goss.

**Scott, A. C.: A New Technique for Total Hysterectomy.** *Tex. St. J. Med.*, 1914, x, 5.

By Surg., Gynec. & Obst.

The patient is placed on the table with the legs held by a modification of the Bierhoff knee holder so that the thighs are extended and widely abducted. Two operators are required, and the one who operates through the vagina either sits or stands according to whether the abdominal operator desires the horizontal or the elevated position. Both operators begin simultaneously.



The vaginal operator, after flooding the vagina with alcohol and swabbing it with iodine, proceeds to destroy and sterilize all accessible diseased tissue with the actual cautery. If the case is a cancerous one, he uses no knife, but surrounds the cervix with a cautery incision through the vaginal wall. He must work close to the cervix on the anterior wall to avoid injury to the bladder. Meanwhile the abdominal operator opens the abdomen, packs off the intestines, frees any adhesions, ligates and severs the ovarian vessels and round ligaments. He then separates the bladder from the uterus, carefully approaching the cautery of the vaginal operator which is now working near the bladder attachment to the cervix.

In cancer of the cervix involving the vagina, dissection of the bladder may be carried down on the anterior vaginal wall to a point safely below the cancerous tissue.

When the bladder is sufficiently out of the way, the vaginal operator proceeds with the cautery, its use being guided by the sense of touch and by sight from both view-points. In case the uterine cavity is septic, it may be quickly sterilized by plugging in the cautery.

When the vaginal operator is ready to separate the vagina from the cervix posteriorly and laterally, he does so under the guidance of the abdominal operator's fingers.

The uterine vessels are isolated by pushing the fingers through the parametrium between the ureter and the vessels as practiced by Wertheim. The vaginal operator then introduces Pryor's clamp without touching its blade to any portion of the vaginal wall, and, guided by the eye and fingers of the abdominal operator, grasps the uterine vessels as far from the uterus as possible, while the bladder and ureter are drawn laterally and anteriorly by a narrow flat retractor introduced through the abdomen. The vessels are severed from below with the cautery. The forceps are left in position for thirty-six or forty-eight hours. When deemed best to use other drainage, cigarette drains are passed into the vagina from above.

C. H. DAVIS.

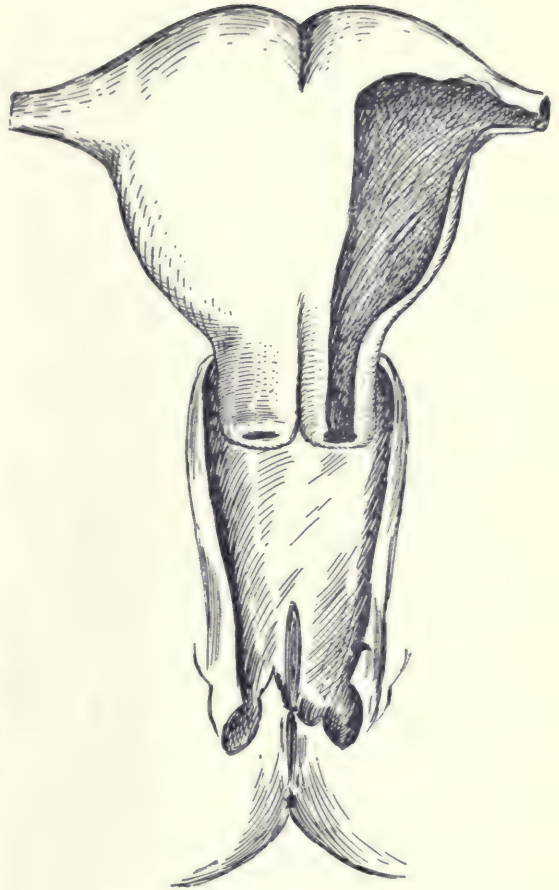
**Smith, G. R.: Uterus Duplex Cum Vagina Bipartita.** *N. Y. M. J.*, 1914, xcix, 989.

By Surg., Gynec. & Obst.

In this case the uterine body contained two cavities, each connecting with the vagina by its own cervix. The lower third of the vagina was divided by a partial septum.

The patient's first pregnancy was in the left uterine cavity and miscarried at the third month; her second ended in premature labor at seven and a half months; and her third, fourth, and fifth ended normally at full term. The sixth pregnancy was the first to occur in the right uterine cavity and was progressing normally when therapeutic abortion was performed because of recent severe pulmonary tuberculosis.

E. A. BULLARD.



(Smith.) Double uterus and cervix.

#### ADNEXAL AND PERIUTERINE CONDITIONS

**De Joug, L.: Anatomical-Clinical Study of the Ovary in Woman; the Interstitial Gland in Patients with Tuberculosis and Fibroma** (*Étude anatomo-clinique de l'ovaire chez la femme. La glande interstitielle chez les tuberculeuses et les fibromateuses*). *Thèses de doct.*, Par., 1914.

By Journal de Chirurgie.

The following are the conclusions of this interesting thesis: There is in woman a variety of follicular atresia which is homologous to the interstitial gland in animals, for it has the same origin and the same morphology. Tuberculosis of the adnexa is rare in cases of pulmonary tuberculosis — 1 case in 20.

The external appearance of the ovary in tubercular patients is variable; it may be smooth or furrowed. Comparison of the size of the ovaries of tubercular and non-tubercular women shows that there is no marked difference, but the weight of the former is less. The number of primary follicles varies with age, being more numerous in younger women. Tuberculosis does not destroy the primary follicles,

but it prevents their development, which results in absence or great rarity of cystic follicular atresias — these formations were found in ovaries functioning normally; absence or rarity of the corpora lutea of atresia, absence in women who died young and rarity in the more aged; absence of the corpora lutea of menstruation in all the cases; absence of fatty inclusions in two corpora lutea of pregnancy found in tubercular patients.

The development of the interstitial gland is variable in patients with fibroma, with respect to the number of follicular atresias and the presence of the corpus luteum of menstruation. The corpus luteum of menstruation may be double. In six cases it was lacking entirely. In five cases there was one corpus luteum; in one of these cases the woman had had a unilateral ovariectomy 18 years before. In one case there was a corpus luteum in each ovary; in one case two corpora lutea in the same ovary. These differences bear no relation to the age of the patients. These facts do not accord with the theories that assume that the mature follicle ruptures regularly 12 to 14 days before the menstrual period. If one assumes a relation between ovulation and menstruation there may be some justification for refusing to accept such facts observed in pathological organs, but there seems to be no reason for assuming that the presence of two corpora lutea was due to the development of the fibroma, as Pillet thinks, for in some cases there was no corpus luteum.

There is no doubt that the ovaries play a part in the uterine hæmorrhage observed in cases of fibroma. Cases of cure of the hæmorrhage by Hégord's operation proves this. The fact that when one or two corpora lutea were present the menses were regular, and when there was no corpus luteum they were irregular, tends to show that the ovary has a regulating action.

L. CHEVRIER.

**Klemperer, P.: Interstitial-Celled Sarcoma of the Ovary** (Über das Zwischenzellsarkom des Ovars). *Beitr. z. path. Anat. u. z. allg. Path.*, Jena, 1914, lviii, 143.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Three cases of round-celled alveolar sarcoma of the ovary, one in a patient of 14 and the two others in patients 19 years of age, were very similar, histologically, to the interstitial-celled tumors of the testicle. In the third case, in which ovarian tissue was still present, there was no well-defined boundary line between the tumor-cells and those of the theca interna, while, so far as this was histologically possible, all transition forms between the two kinds of cells could be recognized.

After rejecting other explanations of the origin, such as endothelioma and unilateral development of tissue elements from a teratoma, Klemperer concludes that it was a proliferation of the cells of the theca interna, which are analogous to the interstitial cells of the testicle. In such ovarian sarcomata there are frequently anomalies in sexual

development, and even pseudohermaphroditism is met with, with relative frequency. This would seem to confirm the hypothesis of those authors, who believe that the internal secretion of the interstitial cells has an influence on the development of the secondary sexual characters.

WEISHAUPT.

**London, A. A.: Hydatidiform Mole with Lutein Cysts of Both Ovaries, Hysterectomy and Double Ovariectomy.** *Australas. M. Gaz.*, 1914, xxxv, 431.

By Surg., Gynec. & Obst.

The author reports a case of vesicular mole in a woman 20 years old, 14 months after her first normal labor. The tumor itself showed no unusual macroscopic or microscopic findings, but the ovaries appeared as two polycystic bodies, each measuring 15 x 9 x 6 cm. The cysts were multiple, but not multilocular. The walls of these cysts were made up of cuboidal cells identical with those found in the normal corpus luteum. Granting that these are lutein cysts, London suggests three hypotheses as to their origin and personally inclines to the last theory: (1) That the multiple cysts represent a malignant dissemination though both ovaries of lutein cells form a single lutein cyst; these cells have taken on active growth and have reproduced the cystic character of the original neoplasm. (2) That most of the graafian follicles in both ovaries have been acted upon by some influence which has caused them to develop into lutein cysts. (3) That the residual cells from previous corpora lutea have been stimulated into activity, have rapidly reproduced, and that the resulting new-growths are the lutein cysts in question.

CAREY CULBERTSON.

**Lipschitz, K.: A Case of Primary Carcinoma of the Tube Developing after an Old Tuberculosis** (Ein Fall von primärem Tubencarcinom auf dem Boden alter Tuberkulose). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 33.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A 44-year-old nullipara in a moderately good state of nutrition complained of pain in the back and abdomen and a sensation of sinking. The uterus was found fixed in retroposition, the adnexa not sensitive. A diagnosis was made of myoma of the uterus with adhesions. Supravaginal amputation of the uterus was performed and the adnexa and both broad ligaments were removed. The uterus was as large as a small fist, studded with intramural nodules of myoma. The right tube at the ampulla passed into a tumor the size of a hazelnut. Microscopically, on section of the tube, typical tubercles were found; inflammation in the muscularis; in the deep tissues slightly atypical epithelial proliferation. Section through the middle of the tumor showed the muscularis chronically inflamed and studded with tubercles, and containing numerous branching papillæ.

The dilated lymph-spaces were filled with tumor-cells. The papillary proliferations started from the



mucous membrane, the epithelium of which showed tremendous proliferation into the lumen. Between the numerous papillæ there were many epithelial nests, of the nature of alveolar carcinoma, and also tubercular tissue. The microscopic diagnosis showed primary papillary carcinoma of the right tube, developing on an old tuberculosis, growing quickly, originating from the mucous membrane and infiltrating the surrounding tissues, especially the muscularis.

The author believes, with Kehrer, that the papillary form of carcinoma of the tube is a more benign predecessor of the alveolar form. This case was on the point of being transformed from a pure papillary into a papillary-alveolar form. The prognosis is bad, especially in cachectic cases. Only 4 cases were free from recurrence after 5 years. The best prospects for recovery are offered by performing the earliest and most extensive removal possible of the uterus and adnexa by Freund's operation. Unfortunately, diagnosis is very difficult.

FALGOWSKI.

**Bell, W. B.: A New Operation for the Treatment of Suppurative Salpingitis in Young Women.** *Surg., Gynec. & Obst.*, 1914, xviii, 634.

By Surg., Gynec. & Obst.

Bell brings forward a new operation for the treatment of suppurative salpingitis in young women.

The object of the operation is to remove the diseased structures as widely as possible without interfering with the function of menstruation. He states that the fundus uteri is frequently affected, and gives a photomicrographic illustration showing round-celled infiltration of the musculature.

The technique is as follows:

1. The right tube is freed by cutting through the mesosalpinx of that side. Next the left tube and ovary are freed by cutting through the broad ligament at the junction of the mesosalpinx and meso-ovarian up to the uterus. A wedge-shaped portion of the fundus uteri is then excised by means of two incisions, one of which is carried across the anterior surface of the fundus and the other across the fundus posteriorly. These incisions meet on the lateral walls of the uterus about half an inch below the tubes. The anterior incision cuts through the insertions of the round ligaments. These two incisions are deepened, the anterior downwards and backwards and the posterior downwards and forwards until they meet in the center of the uterus. The ascending branches of the uterine arteries are caught and tied, as are the other vessels in the broad ligaments when they are cut through. The wedge-shaped opening in the uterus is closed by four mattress sutures which check all the bleeding and bring the flaps together.

2. Next, a continuous suture is carried across the pelvis, approximating the cut peritoneal edges of the mesosalpinx on the right side and of the broad ligament on the left. The peritoneal edges of the uterine flaps are brought together by the same suture as it is carried from one side to the other.

3. Finally, the round ligaments are attached to the stump of the uterus, as is also the right ovarian ligament to prevent the ovary from becoming prolapsed.

The results of all the operations performed so far have been very satisfactory. The author refers to the fact that Beuttner appears to have devised a somewhat similar operation but made no publication of it until after the author had published an account of his own.

**Stern, M. A.: The Non-Operative Treatment of Gonorrhœal and Septic Pus Tubes, Perimetritis, and Parametritis.** *Iowa M. J.*, 1914, xx, 547.

By Surg., Gynec. & Obst.

The author briefly reviews the work being done abroad in the non-operative treatment of gonorrhœal and septic pus tubes, perimetritis, and parametritis. In young women at the height of their sexual activity he recommends the most extended and prolonged use of non-operative therapy. Ninety per cent of these cases remain free from subjective symptoms after the first year. If operation must be performed in young people, he recommends salpingectomy. In some patients this operation is a failure; in women near the climacteric, if the non-operative treatment fails, he recommends panhysterectomy as the operation of choice.

EDWARD L. CORNELL.

**Lanzarini, F.: Large Cystic Lymphangioma of the Right Iliac Fossa** (Volumineux lymphangiome kystique de la fosse iliaque droite). *Med. contemp.*, 1914, xvii, 43.

By Journal de Chirurgie.

The author gives a very complete case report, both clinically and histologically, accompanied by a bibliography. The patient was a married woman of 49 with nothing of especial interest in her personal or family history. For five years she had noticed the existence of an abdominal tumor with pain at a point 3 cm. above the middle of a line passing from the umbilicus to the anterior superior iliac spine. The only symptom was the pain, which was sometimes so great as to make walking impossible. For seven months she thought that the tumor had increased in size immediately after meals. On inspection, the abdomen was prominent but with no special protuberance at any point. On percussion there was dullness in the lower quadrants of the abdomen. On palpation a tumor was found occupying the iliac fossæ, with slight lateral movement. Some points in it seemed of woody hardness, others semi-fluctuating. It was difficult to move the body of the uterus. With one hand on the abdomen and the other in the vagina, the nodules of the tumor could be felt in the posterior cul-de-sac of the vagina.

Laparotomy showed a tumor implanted in the pelvis in the subperitoneal cellular tissue of the right iliac fossa; it was entirely covered with peritoneum and showed some adhesions to the great omentum. The patient recovered.

Lanzarini gives a detailed account of the macroscopic, microscopic, and chemical examination, and

diagnoses it as cystic lymphangioma with points of calcification. He has not the least doubt that it originated in the lymphatics of the right iliac fossa. He says a subperitoneal cystic lymphangioma of the iliac fossa has never been described before. This form of tumor is extremely rare and has only been found in the peritoneum or mesentery. The tumor, which was very large, weighing 5 kilograms, showed calcified nodules varying in size from that of a bean to that of a pigeon's egg. Such a process of calcification has, to the author's knowledge, never been described before. He thinks this was a congenital tumor.

P. DE RÉO-BRANCO.

#### EXTERNAL GENITALIA

**Edelberg, K.: Etiology of Cancer of the Vagina** (Zur Ätiologie des Scheidenkrebses). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 267.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

A carcinoma developed at the place where the posterior part of a pessary had lain. The patient, who was 68 years old, had worn a ring pessary for 15 years; it had not been removed for 12 years and could be removed only in pieces. A microscopical examination of a piece cut from the ulcer showed a flat-celled epithelial carcinoma. Only two similar cases have been reported.

BENTHIN.

**Francey, F.: Treatment of Vesicovaginal Fistulæ by the Transvesical Route** (Cure des fistules vésico-vaginales par la voie transvésicale). *Thèses de doct., Par.*, 1914.

By *Journal de Chirurgie.*

The transvesical route in the treatment of vesicovaginal fistulæ is clearly indicated in the following classes of cases: (1) When the fistula cannot easily be brought down because it is too high up, or the vagina is contracted and sclerotic, or if the neck of the uterus has been amputated the surgeon has no solid point on which to exert traction and bring the fistula down to the vulva; (2) when vaginal operation has failed; (3) when cystoscopy or direct examination leads to the suspicion that the fistula is near the ureteral orifices.

In these cases operation through the bladder is superior to that through the vagina because it gives more light on the fistula. It is easy to prolong the vesicovaginal dissection to a sufficient extent so that the threads do not pull. The last, but not the least, advantage is that the bladder is placed at rest after the operation by hypogastric drainage.

The technique of the operation is very simple, and a plate is given showing the dissection of the neck of the bladder, the closing of the vaginal orifice by a purse-string suture, and the suture of the bladder by a few separate sutures. Thirty-three cases are reported; 25 of these have been previously published. Among the new cases are 6 of Marion's. Recovery was complete in 4 cases. There was failure in one case of fistula following a hysterectomy for cancer of the uterus and in a very large fistula, situated low down and involving the neck of the

bladder with destruction of the sphincter. The operation has given complete success at a single operation in about 60 per cent of the cases.

GASTON PICOT.

**Schmidgall, G.: Bacteriological Examination of the Vaginal Flora of New-Born Girls** (Bakteriologische Untersuchungen über die Scheidenflora neugeborener Mädchen). *Beitr. z. Geburtsh. u. Gynäk.*, 1914, xix, 190.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

Twenty-one infants were examined immediately after delivery and 10 children under a year of age. The vaginal secretion was transferred to Schottmüller's blood agar plates. It was shown that the bacteria enter the vaginal secretion during the first few days of life. Generally colonies developed after the second day. The bacilli most frequently found were streptococci, staphylococci, colon bacilli, and vaginal bacilli; rarely gram-negative colon-like rods, micrococcus tetragonus, different strains of saccharomyces, anaërobic streptococci, staphylococcus parvulus, bacillus hæmophilus, and bacillus bifidus.

The secretion of the infant's vagina does not show any inhibitory effect on the growth of pyogenic bacteria. Hæmolysis was acquired and lost during the course of the examinations, and seems to be a variable fermentative quality of the bacteria, which is an expression of increased life energy in an individual strain. It is very probable that the flora of the mother influences the secretion of the child. The frequency of streptococci shows that the medium is important.

The intestinal bacteria influence the vaginal flora very little for the first nine days. Bacillus bifidus, the typical bacillus found in the nursing's stools, was never found in the vagina of the new-born, while in the older children the intestinal bacteria made up a half of the vaginal ones. The results indicate that there is no autocleansing of the vagina.

STOLZ.

#### MISCELLANEOUS

**Von Graff, E.: Basedow's Disease as a Contra-Indication to Gynecological Röntgen Treatment** (Die Basedowsche Krankheit als Kontraindikation gegen gynäkologische Röntgentherapie). *Wien. klin. Wchnschr.*, 1914, xxvii, 93.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

The author observed in many cases where myomata of the uterus were treated by röntgen rays that symptoms of Basedow's disease were manifested after the treatment. He therefore comes to the conclusion that röntgen treatment should not be used when there are the slightest signs of a tendency to Basedow's disease. Small doses of röntgen rays will probably have no effect on the Basedow's disease, but large doses, which temporarily exclude the function of the ovaries, will lead to an attack of Basedow's disease where there is a predisposition to it, and will also have an unfavorable effect on an already existing Basedow's disease.

GINS.



**Opitz, E.: Treatment of Sterility in the Female** (Über Behandlung der weiblichen Unfruchtbarkeit). *Therap. d. Gegenw.*, 1914, lv, 14.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In half the cases the man is responsible; and in probably 10 per cent of the cases there is absence or death of the spermatozoa. Often the men are the last born in families with numerous children; so it is possible that they have not inherited sufficient vitality. In primary sterility of the woman constitutional causes, congenital and acquired, are emphasized. Anæmias are of great importance, also obesity which may be of thyroid origin. Two cases were successfully treated with iodothylin. Infantilism is important, but acute antelexion is a normal condition in the virgin.

In dysmenorrhœa general treatment should be tried first; only in older persons should the cervix be dilated and a Fehling's glass tube inserted until after the next menstruation. Among local causes he mentions the obscure cases in which pregnancy occurs after the removal of a small unilateral ovarian tumor. He operated on the tube three times without success. In one case an abnormally long tube seemed to have caused repeated tubal pregnancies with early abortion and therefore childlessness. Normal pregnancy occurred after resection of a piece of the tube in which the remnants of an ovum were found. If there is tough mucus in the cervix, the cervical mucous membrane should be cauterized and general treatment given, especially for constipation. Opitz has had no opportunity for artificial impregnation. Secondary sterility is much more unusual; treatment is seldom possible and rarely desired. There are often constitutional causes for repeated abortion. First, general treatment should be given and then, according to Lomer, potassium iodide, 0.5 per day, and iron. Syphilis is less frequently responsible; when it is premature delivery generally occurs. In such cases mercury should be given during pregnancy. KERMAUNER.

**Kakuschkin, N. M.: Exploratory Puncture, as a Method of Treatment in Gynecology** (Die Probepunktion als Heilmittel in der Gynäkologie). *Ztschr. f. Geburtsh. u. Gynäk.*, 1914, lxxv, 597.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Exploratory puncture of the posterior vaginal vault has not only diagnostic but therapeutic value. It is best performed over the finger, with a speculum holding back the anterior vaginal wall. Very frequently, after the exploratory puncture of pelvic exudates and infiltrations, the temperature falls and the inflammatory products are absorbed. These favorable changes are due less to the emptying out of a small quantity of exudate than to changes in the circulation analogous to Bier's hyperæmia. With a suggestion of the favorable results of puncture in other fields of medicine and surgery, the author recommends this procedure in the treatment of old intraperitoneal and extra-peritoneal exudates. GRÄFENBERG.

**Bachrach, M.: "Assimilation" Pelvis at the Heidelberg University Gynecological Clinic** (Die Assimilationsbecken der Heidelberger Universitäts-Frauenklinik). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxv, 425.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The form of pelvis known as "assimilation" pelvis arises from disturbances in the embryonic development of the bones forming the pelvis; that is, the vertebræ forming the sacrum and the ilium. Normally, in the fœtus there are 35 vertebræ, and the synostosis to form the sacrum begins at the twenty-sixth. But varying numbers of vertebræ may be "assimilated," the synostosis beginning sometimes as high as the twenty-fourth or as low as the twenty-eighth, whence arise the various forms of assimilation pelvis. Many of these pelvis have no pathological significance in obstetrics and therefore escape diagnosis and are only recognized on exact measurement by their configuration and proportions. There are five types: (1) the high; (2) the transversely contracted; (3) the flat middle pelvis in which there is a shortening of the conjugata media; (4) the low; and (5) the asymmetrical.

The most frequent forms are the asymmetrical and the high, the latter being characterized by the high position of the promontory and slight inclination of the pelvis. The low form shows a low position of the promontory and a marked transverse concave bend of the sacrum.

The author describes cases from the specimens at the Heidelberg clinic, with exact measurements and description of the anatomical characteristics. He describes 4 high symmetrical; 4 low symmetrical; 3 high asymmetrical pelvises; 4 combined forms of high, low, and asymmetrical assimilation; 5 assimilation pelvises based on specific bone diseases, rickets, and osteomalacia; and 2 sacra that belong to such pelvises. The assimilation pelvis cannot be regarded as directly pathological: it represents only the reaction to a pathological condition. SEMON.

**Moos, S.: Experience in Intravenous Injection of Arthigon, in Gonorrhœa in Women** (Erfahrungen über intravenöse Arthigininjektionen bei der Gonorrhœe des Weibes). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 333.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In 113 cases, intravenous injections of arthigon were used for diagnostic purposes. There is a certain value in intravenous injection of arthigon, but the findings in women are not so constant that any absolutely certain conclusions can be drawn from them. After the intravenous injection of 0.05 ccm., which is the best dose for women, a rise of temperature of 1.5 degrees indicates that there is probably a gonorrhœal process present, a rise of 2 degrees makes it much more probable. In 47 cases, intravenous injection of arthigon was used for therapeutic purposes. The method shows no marked advance over intramuscular vaccination and the treatment previously in use. BLANCK.

# OBSTETRICS

## PREGNANCY AND ITS COMPLICATIONS

**Orloff, A. N.: Etiology of Extra-Uterine Pregnancy** (Zur Ätiologie der Extrauterin gravidität). *Verhandl. d. xii Pirogoff-Kong.*, St. Petersburg, 1913, ii, 83.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Extra-uterine pregnancy is as common among the peasantry of Russia as among the city dwellers. The most frequent causes are inflammatory diseases of the adnexa and pelvic peritoneum from abortion, puerperal infection, and appendicitis. The mechanical theory that the migration of the ovum is hindered by inflammatory processes or congenital hypoplasia does not explain all cases of extra-uterine implantation. If the adnexa are unchanged the cause of the extra-uterine pregnancy must be sought in the ovum itself. Excessive migration of the ovum is rarely the cause of extra-uterine pregnancy. Lactation atrophy of the tubes in long-continued nursing is a frequent cause. Diagnosis is easy from the history and findings. Exploratory puncture is only rarely demanded. The best treatment is removal by laparotomy. WAEBER.

**Grusdjew, W. S.: Extra-Uterine Pregnancy** (Zur Frage der Extrauterin gravidität). *Verhandl. d. xii Pirogoff-Kong.*, St. Petersburg, 1913, ii, 458.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Abderhalden's pregnancy reaction fails in the differential diagnosis of extra-uterine pregnancy. In three cases where a diagnosis of extra-uterine pregnancy was made from the history and the local findings the reaction was positive. The diagnosis was confirmed by operation in only two of the cases. In the third case only inflammatory changes were found. A case of bilateral tubal pregnancy is reported; both ova were from one ovulation period. In one tube, abortion had taken place early, while in the other, pregnancy had persisted three months. It was complicated with appendicitis. The operation was begun by posterior colpotomy, but anatomical changes and copious hæmorrhage compelled the application of a tampon and the continuance of the operation by laparotomy. A case of torsion of the pedicle in tubal pregnancy is reported. Torsion of the pedicle may cause tubal abortion; it may cause secondary hæmorrhage after death of the ovum, or reactive peritonitis with swelling of the tumor.

WAEBER.

**Mapes, C. C.: Ovarian Gestation.** *Am. J. Surg.*, 1914, xxviii, 191.

By Surg., Gynec. & Obst.

Mapes in his article extensively reviews the literature on ovarian gestation and gives several case reports from the literature.

In his opinion ovarian gestation occurs probably more frequently than is usually believed. He is inclined to believe that "blood cyst" of the ovary, rupture of the ovary, and pelvic hæmatocele may have for their etiology ovarian gestation.

EUGENE CARY.

**Druskin, S. J.: Extraperitoneal Cæsarean Section, with Report of a Case.** *J. Am. M. Ass.*, 1914, lxii, 1383.

By Surg., Gynec. & Obst.

The author reports a case in which the patient, a primipara, aged 21, with a generally contracted pelvis, had been in labor sixty-three hours before the operation. The extraperitoneal method was indicated as the membranes were ruptured and there had been several vaginal examinations.

The technique which the author follows is the combined Latzko-Sellheim method. The underlying principle is the separation of the bladder to one side (Latzko) and the separation of the plica upward (Sellheim). While this operation is more difficult and more time-consuming than the classical operation, neither mother nor child suffers through the longer time consumed. The author believes that the patients suffer less after this type of operation. Its chief advantages are: (1) Lessened bleeding; (2) non-exposure of the peritoneum; (3) lessened danger of post-operative hernia, and (4) the fact that the extraperitoneal section can be performed when it would no longer be safe to do the classical operation.

C. H. DAVIS.

**Nürnbergger, L.: Study of Placenta Prævia, Especially Placenta Prævia Accreta** (Zur Kenntnis der Placenta prævia, speziell der placenta prævia accreta). *Prakt. Ergebn. d. Geburtsh. u. Gynäk.*, 1914, vi, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author presents two cases. In the first case the uterus was removed in the third month of pregnancy for subserous myoma. A distinct isthmus could be demonstrated both macroscopically and microscopically. The upper third of the cervical canal showed typical decidual transformation. Between this part and the beginning of the cervical mucosa, which was sharply marked off, there was a zone without decidual transformation, but showing the characteristic changes of pregnancy in the glands, which the cervical glands never show. (2) In a case of isthmus-cervix pregnancy there were intimate adhesions of the placenta with the anterior wall of the isthmus and the cervical canal. Microscopic examination showed absence of the spongiosa of the decidua, splitting of the muscularis, connective-tissue hyperplasia, and excessive proliferation of chorionic elements in the myometrium.



The abnormal insertion of the ovum and the extensive chorionic invasion alone could not have caused the extreme degree of adhesion between the placenta and the wall of the uterus, as is shown by a comparative study of the conditions in other placenta prævia cases and in tubal pregnancy. We must agree with Baisch in considering the great changes described above in the decidua and uterus, on which the normal mechanism of the separation of the placenta depends, as responsible for the origin of placenta accreta. Moreover, the deposition of chorionic elements in the normally close texture of the myometrium leads to a change in its statics and therefore to hypofunction. The advanced parenchymatous degeneration of the myometrium is probably explained by the chemical fermentative effect of the chorionic epithelium.

BISCHOFF.

**Reinhardt, E.: Danger of Tamponing in Placenta Prævia** (Über die Gefahren der Tamponade bei Placenta prævia). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 168.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

Among 276 cases of placenta prævia treated during the last ten years at the Dresden Gynecological clinic, 115 were admitted to the hospital after being tamponed. Generally the tampon was applied by the physician and the patient brought immediately to the hospital. Immediately after admission, 4 to 8 hours after the tampon was applied, it was removed. Forty-one per cent of the cases were admitted with tampons, 58 per cent without tampons; the total morbidity was 42 per cent, the total mortality 2.2 per cent. Of the non-febrile cases, 47 per cent were tamponed, 66 not tamponed. Of the febrile cases, 53 per cent were tamponed, 34 per cent not tamponed. Of those who died of sepsis, 5, or 4.3 per cent, were tamponed; 1, or 0.7 per cent, were not tamponed.

The morbidity and mortality in the tamponed cases is noticeably higher, but tamponing and infection are not synonymous terms. With very threatening hæmorrhage and the os almost or entirely closed the tampon cannot always be avoided in practice. In moderate hæmorrhage, examination should be made externally or rectally, not vaginally, and the woman taken to the hospital without tamponing; 1.5 gr. of morphine should be injected to decrease the activity of the pains. If, with moderate hæmorrhage, placenta prævia is not demonstrated, it would be a great mistake to tampon. If tamponing is absolutely necessary it should be done with as careful asepsis as an obstetrical operation. Sterile gauze should be used that has been dipped in a mild permanganate, or alum solution.

NEBESKY.

**Ebeler, F.: Tuberculosis and Pregnancy** (Tuberkulose und Schwangerschaft). *Prakt. Ergebn. d. Geburtsh. u. Gynäk.*, 1914, vi, 87.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

The literature of the present status of the question of tuberculosis and pregnancy is reviewed,

especially the different and frequently opposed views of individual authors in regard to abortion for tuberculosis. Thirty-two cases of manifest tuberculosis with pregnancy are described. The author recommends abortion unconditionally in every stage of tuberculosis and in every month of pregnancy. The prospects in the third stage of tuberculosis are very bad. In three-fourths of his cases in the first and second stages the author saw a marked improvement in the objective lung symptoms. He thinks the best method of interruption of pregnancy and sterilization is vaginal amputation of the body of the uterus, not vaginal total extirpation as recommended by Bumm. After the abortion sanitarium treatment is indispensable.

DREWS.

**Wobus, R. E.: Pyelitis Complicating Pregnancy**, *J. Missouri St. M. Ass.*, 1914, x, 426.

By Surg., Gynec. & Obst.

Pyelitis and pyelonephrosis are often overlooked, either through lack of careful examination or through ignorance of the existence of this uncommon condition. They have not received the attention they deserve. After discussing the subject from the clinical standpoint and taking up the treatment, the author comes to the following conclusions:

1. Pyelitis is not an infrequent complication of pregnancy.
2. Its diagnosis is often overlooked, at any rate early.
3. In most cases it can be held in abeyance by means of urinary aseptics, properly administered.
4. Many cases of so-called pyelitis of pregnancy are simply old cases of urinary infection which have become active on the addition of the added factor of pregnancy, and should be considered so until proved otherwise.

EDWARD L. CORNELL.

**Durham, J. G.: Gall-Stones Complicating Pregnancy — Six Cases.** *Southern M. J.*, 1914, vii, 389.

By Surg., Gynec. & Obst.

Graham briefly discusses the occurrence of gall-stones in women during pregnancy and the puerperium. He considers the symptomatology, diagnosis, and treatment. In the treatment the proper course to follow is to disregard the pregnancy and treat the patient according to the gall-stone indications. Mild cases can be tided over by medical treatment, but if the gall-stone symptoms become urgent it is necessary to operate at once. Pus in the gall-bladder, accompanied by chills, fever, pain, and jaundice, will produce miscarriage. The operation itself is no more likely to produce miscarriage than any other abdominal operation the surgeon may be called upon to perform during pregnancy.

The author reports three cases complicating pregnancy and three complicating the puerperium. In those cases complicating pregnancy one patient died following rupture of the gall-bladder, while the other two recovered and went on to full term. The three cases occurring during the puerperium all



recovered from the operation, one of them, however, developed attacks of biliary colic three months later, due to a stone which was floating in the common duct. Operation two years later was followed by uncontrollable hæmorrhage on the second day with death.

EDWARD L. CORNELL.

**Saunders, C. A.: The Management of Pregnancy, Labor, and the Puerperium.** *Virg. M. Semi-Month.*, 1914, xiv, 69. By Surg., Gynec. & Obst.

The author gives a general discussion of his care of the pregnant woman and submits the following data: He has delivered 235 multiparæ and 121 primiparæ; of these 7 were negroes. He has used forceps 16 times. There were 17 tears of the perineum requiring from three to seven stitches and 2 complete tears. There were 7 "blue babies" and 5 stillborn. The hand was inserted in the uterus 3 times. He reports 8 pairs of twins. There was a slight post-partum hæmorrhage in two cases. One mother died rather suddenly on the twelfth day, the cause of death not being given. He had no cases of sepsis, ophthalmia neonatorum, abscess of the breast, cracked nipples, fissured nipple, or mastitis. He has had no eclampsia.

C. H. DAVIS.

**Schauta, F.: Ovarian Tumors and Pregnancy** (Ovarialtumor und Gravidität). *Wien. med. Wchnschr.*, 1914, lxi, 141.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Every ovarian tumor that is diagnosed should be removed by operation because of the large percentage of malignant degeneration. The coexistence of pregnancy does not alter this rule. The frequency of ovarian tumors and the rarity of pregnancy coexisting with them shows that the tumors tend to prevent pregnancy. During pregnancy they grow rapidly like all tumors. They may cause abortion because of limiting the space for the growth of the uterus. They may rise out of the true pelvis or not, depending on their mobility. If they do not rise on account of adhesions they may interfere with labor or may rupture. This danger may be avoided by performing cesarean section, emptying the tumor by puncture, or by early reposition. The latter is often impossible because of adhesions, and dangerous because apt to be complicated by hæmorrhage. In the puerperium a uterine infection may extend to the tumor and cause severe disease. Therefore ovarian cysts that are discovered during labor should be removed during the puerperium even if they cause no symptoms.

BENTHIN.

**Pisacček, L.: Diverticulum of the Uterus, and Its Relation to Pregnancy** (Über Uterus divertikel und ihre Beziehung zur Schwangerschaft). *Gynäk. Rundschau*, 1914, viii, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A 45-year-old VII-para died of rupture of the uterus immediately below the contraction ring. The pelvis was normal. In her six preceding deliveries the placenta had been separated manually. In the

specimen, 4 cm. from the entrance of the left tube there was a projection the size of a cherry with walls as thin as paper. The surface was formed by peritoneum and there was a crater-shaped defect in the uterine muscle corresponding to its inner surface. Near the entrance of the right tube there was another projection corresponding to a shallow depression on the inside of the uterus. Neither of these places corresponded to the insertion of the placenta, which was 4 or 5 cm. away from them.

The author could not find any cases in the literature that were similar anatomically and in which there was intra-uterine pregnancy. Bröse, 1889, reported a case that was similar clinically. A IV-para had a placenta prævia with a transverse presentation; on external palpation it felt as if the arm of the fœtus was projecting out of the fundus uteri, and a gap was found in the uterine muscle that admitted two finger-tips. The author believes that his case of diverticulum was caused by the removal of a piece of the muscle wall in one of the previous separations of the placenta. The vesicular projection was an artificial product of the puerperal retraction of the wall of the uterus.

Undisturbed intra-uterine pregnancy is a mere change in diverticulum of the uterus. Thus far six cases have been described. The author discusses symptoms, diagnoses, and anatomical findings in the individual cases. He regards Schickele's case as undoubtedly a case of diverticulum pregnancy, while Freund's and Hellendal's were excessive diverticulum-like projections of the fundus, and Spaeth and Barchet only assumed a diverticulum pregnancy.

The chief factors in the etiology are injuries with instruments or the hand in separating the placenta or emptying the uterus after abortions, and injury to the muscle by severe endometritis. Hydatidiform moles and poorly healed scars from cesarean section may also be responsible.

VON MILTNER.

## LABOR AND ITS COMPLICATIONS

**Gillespie, W.: The Problem of Using Oxytocic Drugs During Labor.** *Lancet-Clin.*, 1914, cxi, 572.

By Surg., Gynec. & Obst.

In this paper the author opposes the use of oxytocic drugs generally and substitutes forceps delivery as a more rational procedure when interference is necessary.

He emphasizes the fact that the uterine sinuses are very much larger than the vessels feeding them, and that the rhythmic uterine contractions from the time of conception to delivery are absolutely necessary to the life of the fœtus. Consequently, oxytocic drugs, all of which cause more or less disturbance in this alternate contraction and relaxation of the uterine musculature, are dangerous to the life of the child. They may also be responsible for rupture of the uterus, as well as severe lacerations of the perineum. On the other hand, instruments in the hands of an intelligent man are



safe where drugs would result fatally to the child or disastrously to the mother. C. D. HOLMES.

**Esch, P.: Dosage and Results of Intramuscular Pantopon-Scopolamine Injections in Parturient Women** (Über Dosierung und Erfolge von intramuskulären Pantopon-Scopolamininjektionen bei Kreissenden). *München. med. Wchnschr.*, 1914, lxi, 690.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author gave intramuscular injections of pantopon-scopolamine in 200 head presentations, in 100 primiparæ and 100 multiparæ; 81 of them had one injection each, 82 two injections, 33 three, and 4 more than three. For the first injection 9 ccm. of a solution were used that contained 0.015 pantopon and 0.0003 scopolamine to the cubic centimeter; for further injections 0.005 pantopon and 0.00015 scopolamine were used. If the head is already on the floor of the pelvis or delivery is near, then 1 ccm. should be given at once.

It is important to choose the right time for the first injection, which should be when there are strong, regular pains at five-minute intervals. The second injection ordinarily follows 53 to 61 minutes after the first; if only moderate effect is noted it may be given after 20 to 30 minutes. The second injection is generally followed by sleep. The results in primiparæ are analgesia or deep hypalgesia in 74 per cent of the cases; in multiparæ, analgesia in 73 per cent; satisfactory results which could have been improved by better technique, in 22 to 25 per cent; 3 per cent failures.

The undesirable symptoms are: thirst, a feeling of dryness and heat, psychic changes, intense reddening of the face, and especially an effect on the strength of the contractions. For this reason pituglandol was injected in 23 per cent of the primiparæ and 39 per cent of the multiparæ. In primiparæ the length of labor was increased on an average 1 hour, in spite of the pituglandol. There were only two operative deliveries. Of the children, 196 were born alive, 3 with oligopnoea, one with rupture of the tentorium. The treatment is contraindicated when delay in delivery is to be expected or when quick delivery is desired. It should be used with caution in lung complications, disturbances of the circulation, general and febrile diseases, and in primiparæ under 16 years of age, chronic kidney diseases, syphilis, and premature deliveries. Complicated cases are contra-indications. In psychic changes and intense reddening of the face, injections should cease. GRAEUPNER.

**Brodhead, G. L.: Vagitus Uterinus.** *N. Y. M. J.*, 1914, xcix, 1028.

By Surg., Gynec. & Obst.

The case reported was a multipara with a long second-stage labor during which the baby was heard to cry distinctly as forceps were being applied to the head in mid-pelvis with successful delivery.

Telfair had previously reported forty-four cases, mostly operative deliveries, with a foetal mortality of ten per cent.

McLean had also reported a case in which the crying was kept up constantly during the time required to rotate an occiput anterior and deliver by forceps a head which had been above the brim. D. H. BOYD.

**Michaelis, R.: Discharge of an Ovarian Cyst from the Anus, during Delivery** (Austritt eines Ovarialcystoms aus dem After während der Geburt). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 154.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The case is interesting because it is so rare. The patient was a 23-year-old II-para. The physician applied forceps 24 hours after the beginning of labor because there was no progress, but in spite of strong traction there was no result. The patient was brought to the hospital and forceps applied to the head fixed firmly in the pelvic inlet. The os was fully dilated. During the traction a cystic tumor of the ovary with a pedicle appeared from the rectum. The child was then easily delivered. The woman died. An abscess was found around the uterus that reached deep down into the pelvis. There was no general peritonitis. The rectal sutures had held.

BENTHIN.

#### PUERPERIUM AND ITS COMPLICATIONS

**Zweifel, E.: Eclampsia after Total Extirpation for Rupture of the Uterus with Severe Anæmia in a IV-Para** (Eklampsie nach Totalexstirpation wegen Uterusruptur mit schwerer Anämie bei einer Viertgebärenden). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 195.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A IV-para with a contracted pelvis had a complete and violent rupture of the uterus after attempts at delivery. The physician brought the unconscious patient to the hospital, where the child was extracted by laparotomy and the uterus and left adnexa removed. Three and one-half hours after the operation the patient had an attack of eclampsia, and Stroganoff's treatment was given. On the third day the patient awakened from coma, but there was a complete inhibition of speech. For four days she had incontinence of urine and fæces; on the seventeenth day she could speak again and on the thirtieth she was dismissed.

The etiology of the later disturbances is not clear. It may have been a condition of weakness due to the anæmia or a sequel of the eclampsia. It is possible that the condition of unconsciousness in which the patient was delivered was due, not to anæmia and shock, but to eclampsia. KREBS.

**Schiller, A.: Treatment of Eclampsia, Based on the Experience of the Königsberg University Clinic** (Zur Eklampsiebehandlung auf Grund der Erfahrungen der Königsberger Universitätsklinik). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 147.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Schiller discusses the methods of treatment used at the Königsberg University clinic since 1882 in



360 cases of eclampsia. The treatment began with chloroform narcosis and the administration of large doses of morphine and chloral by Von Veit's method; then, accepting the placental theory of the cause of eclampsia, the treatment was changed to early and rapid delivery, Dührssen's vaginal caesarean section giving the best results. It must be remembered that the results of this method depend, not on the number of attacks, but on the time which has elapsed between the first attack and the delivery.

Stroganoff's method resembles a return to Von Veit's. It is a prophylactic method, the chief point of which is to guard against further attacks occurring rather than to treat during the attack. Schiller modifies this expectant treatment by emphasizing the importance of the primary blood-letting as a curative measure. According to Schiller's experience there is still a balance between the active and expectant methods of treatment, as in every case there are numerous factors to be taken into consideration that may decide for the one or the other method. Extreme measures are successful only in exceptional cases. In eclampsia, as in other things, the middle course is safest. BAYER.

**Seligmann, S.: Etiology of Endogenous Puerperal Infection** (Zur Ätiologie der endogenen Puerperalinfektion). *Ztschr. f. Geburtsh. u. Gynäk.*, 1914, lxxv, 548.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In 1911-1912 Goldstrom made bacteriological examinations of a series of vaginal secretions, and in 1912-1913 Seligmann made accurate tables of a series of cases, confirming Goldstrom's results, that is, that it makes no difference in the prognosis of the puerperium whether there are streptococci present in the lower third of the vagina during labor or not, when examination is exclusively rectal. Also the number of streptococci in the vaginal secretion of parturient women, and whether they are hæmolytic or not, makes no difference as shown by these examinations. Since in women examined only per rectum neither the presence nor the number of gonococci influences the course of the puerperium, other factors must be sought in the causation of endogenous puerperal infection. BAYER.

**Bublitschenko, L.: Puerperal Staphylococcus Sepsis** (Über puerperale Staphylokokkensepsis). *J. Akush. i. jensk. Boliez.*, St. Petersb., 1914, xxix, 45.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Based on the reports in the literature and his own material of 5 cases, in 4 of which staphylococcus aureus or albus could be demonstrated in the blood, the author comes to the following conclusions: (1) General staphylococcus infection is much more frequent than has been supposed. (2) A single positive blood examination does not indicate a severe infection; it takes several positive findings to make the prognosis serious. (3) In severe cases of general infection, hæmolytic staphylococci have almost always been found. (4) In the human body, staphy-

lococci can very quickly acquire hæmolytic properties. HEIN.

**Telfair, J. H.: Complete Inversion of the Uterus, Following Delivery.** *N. Y. M. J.*, 1914, xcix, 882.

By Surg., Gynec. & Obst.

The author reports a case of complete inversion of the uterus in a primipara who was delivered of a full-term child ten hours before admission to the hospital. Her condition was so desperate that saline infusion, Murphy drip, and stimulants were given previous to operation. Under an anæsthetic it was impossible to dilate the cervical constriction through the abdominal wall, and by starting pressure upward on the right lateral wall of the uterus it was possible to gradually replace the uterus. The uterus was then packed with gauze. The patient left the hospital on the third day against advice and died on the seventh day after delivery.

C. H. DAVIS.

**Kreiss, P.: The Treatment of Post-Partum Hæmorrhage, by the Intravenous Injection of Hypophysin** (Die Bekämpfung der post-partalen Blutungen durch intravenöse Hypophysininjektion). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 119.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Basing his conclusions on 30 cases, Kreiss recommends the intravenous injection of hypophysin for the treatment of post-partum hæmorrhage. The individual dose is 0.5 to 1 ccm.; for most people 0.5 ccm. is enough. The injection should be made as slowly as possible. Collapse following it need not be feared. The patients recover quickly. The effect appears quickly, even while the injection is being given. Kreiss also recommends its combination with ergotin preparations, which has also been recommended by other authors. A further advantage of hypophysin is that the composition is always the same, and therefore the effect is always the same. In conclusion he condemns tenosin, which he thinks is a dangerous preparation, although it is chemically purer than it formerly was. FRANK.

## MISCELLANEOUS

**Meyer-Rüegg, H.: Fertilization and Implantation of the Human Ovum** (Einiges über Befruchtung und Einbettung des menschlichen Eies). *Cor.-Bl. f. schweiz. Ärzte*, 1914, xlv, 257.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The article contains an exact description of the anatomical structure of the ovaries, ovulation, the structure of the interstitial ovarian glands, the function of the corpus luteum, the anatomical structure of the uterine mucous membrane, and the changes in it during menstruation and implantation. There is a discussion of the relation between ovulation and menstruation, and the different processes that take place in impregnation, migration, and implantation of the fertilized ovum. The different possibilities are reviewed that may lead to irregu-



larities in the development of the pregnancy, whether they take place in the migration or the implantation. In conclusion, a detailed description of Abderhalden's pregnancy reaction is given, the practical value of which in human medicine is doubted; the question of chorio-epithelioma is also touched upon.

FRANKENSTEIN.

**Sheill, S.: Congenital Icterus.** *Lancet*, Lond., 1914, clxxxvi, 1316. By Surg., Gynec. & Obst.

The author reports a case of congenital jaundice in which an operation was performed for its relief without success. The mother had given birth to two children previously both of which died from jaundice in a few days. During pregnancy the mother had complained of pain in the epigastrium, which was frequent and annoying. Her condition had been diagnosed by others as appendicitis, gall-stones, etc. After an easy delivery she complained little of her pain. The infant developed jaundice within a few hours after birth and steadily grew worse. It was operated on within forty-eight hours after birth and the gall tracts were found to be intact and patent. The gall-bladder was found to contain a very viscid bile which could not flow through the lumen of the ducts. The bladder was drained but the infant died within nine hours.

The treatment of this form of jaundice is early operation, but there is always the difficulty of recognizing the obstruction sufficiently early to ensure a good result, for the signs and symptoms are so similar to those of simple or pseudojaundice that the affection may have progressed beyond the possibility of recovery before the obstruction be suspected, and a dilated gall-bladder cannot always be palpated with certainty. Moreover, the obstruction is not always amenable to operation as the process may have spread deeply through the liver itself. The family history of these cases helps but little, and it is the same with the familial or hereditary form of jaundice — a rare form, the pathology of which is far from being clearly understood.

EDWARD L. CORNELL.

**Blair, V. P.: The Treatment of a Case of Birth Fracture of the Shaft of the Femur.** *Surg., Gynec. & Obst.*, 1914, xviii, 640.

By Surg., Gynec. & Obst.

For the treatment of a birth fracture of the femur the author presents a satisfactory splint cut of galvanized steel of the weight used for house gutters.

There is a body portion reaching from the greater trochanter of the femur to the axilla, and enveloping the back and both sides, fitting fairly close. A small buttress maintains the stability of the body portion by resting squarely on the bed. The thigh portion corresponds with the normal position of a baby's thigh flexed on the abdomen. The leg part of the splint is longer than the infant's leg, parallel with the bed, and its lower border is bent mesially to form a small shelf.

The splint is heavily padded and the baby is laid

in the body portion, resting there simply by its weight; while the thigh and leg, after being covered with cotton, are bandaged to the splint. This is removed and reapplied every day at the time the baby is bathed and powdered, the nurse requiring some one for the first few days to hold the injured limb in position.

The baby upon whom this was tried suffered no inconvenience and in four weeks the union was firm and in excellent position.

**Klotz, R.: A Case of Acardiac Anencephalus with Partial Absence of Both Müller's Ducts** (Ein Fall von Acardius anencephalus mit partiellem Defekt beider Müllerschen Faden). *Arch. f. Gynäk.*, 1914, ci, 537.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The length of the specimen was 15 cm. The head and upper extremities were lacking — holocardius acephalus; talipes equinovarus was present on both sides; there were irregularities in the toes; only the 7 lower ribs were present and they were rudimentary; above the seventh thoracic vertebra there was only a bone 1 cm. long not divided into vertebrae, the spinal cord being present up to this place; the large intestine was short, opening outward normally; the vermiform appendix was present; of the small intestine there was only a piece 2 mm. long; back of the peritoneum there was a horse-shoe kidney opening downward; the ureters were normal on both sides; along the spinal cord were large arteries and veins, and between them an organ half as large as a pea that could not be recognized even microscopically. There were three vessels in the umbilical cord; and there were ovaries on both sides, as shown by microscopic examination. Laterally, the tubes extended as solid cords; fine cords extending from the ovary represented the ovarian ligament, which disappeared in the caudal direction; macroscopically, nothing could be seen of the round ligament; the vesico-rectal pouch was very deep; the bladder was small; the external genitalia were feminine; there was no vagina; no müllerian ducts could be found; the pelvis was normal in the röntgen picture.

The author believes this is the first case of almost total absence of both müllerian ducts, and thinks this is to be explained by the early destruction of the wolffian duct. The acardia is explained by amniotic adhesions.

KERMAUNER.

**Lejbowitsch, J.: The Frequency of "Giant" Children and Their Significance in Obstetrics** (Die Häufigkeit und geburtshilfliche Bedeutung der Riesenkinder). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 162.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Some authors have designated as giant children all those weighing over 4,000 gms., although their birth does not generally show the characteristics peculiar to the delivery of giant children. The author proposes to designate children weighing over 4,400 gms. as abnormally large, and those

weighing more than 5,000 gms. as giant children. His case was that of a 36-year old VIII-para, who two years before had been delivered of a macerated child weighing 6,750 gms. When the author was called for the delivery under consideration the head was already born and he extracted a child weighing 6,250 gms., 65 cm. long, head circumference 37 cm., shoulder circumference 47 cm. Giant children are borne most frequently by mothers of advanced age, strong constitution, and good state of nutrition. Frequently the pelves are larger than normal. There is a marked preponderance of boys.

Among 15,000 deliveries there were 90 abnormally large children, 75 per cent of them boys; 15 per cent were born dead. Among the 15,000 there were 6 giant children. All were artificially delivered. All the mothers were over 30 and multiparæ. The mortality is not given.

ROTHE.

**Rongy, A. J. and Arluck, S. S.: Pituitrin.** *N. Y. M. J.*, 1914, xcix, 878. By Surg., Gynec. & Obst.

After a careful study of pituitrin in 300 cases, the authors draw the following conclusions:

1. Pituitrin does not induce labor pains.
2. It should not be used in the early part of the first stage of labor, for its action is too transient.
3. It should not be used in complete inertia because of danger of rupture of the uterus.
4. It is contra-indicated in cases of dystocia due to malposition or contracted pelvis.
5. It should never be used in cases in which a sudden rise of blood-pressure might prove dangerous.
6. A single dose of pituitrin may be used as an adjuvant in cases where pregnancy is interrupted either by a catheter or bag, and only when contractions of the uterus have already set in.
7. It should be used only in cases in which the cervix is dilated or dilatable, and the presenting part is engaged in the pelvic outlet.
8. It should be used cautiously in cases in which the foetal heart sounds are feeble or irregular.
9. It should never be used unless a general anæsthetic is within easy reach, for the contractions may become so violent that rupture of the uterus becomes imminent.

The authors recommend the use of morphine hypodermatically in cases of inertia. It is seldom found to be a source of danger to the child even when large doses are given. Morphine, in addition to inducing rest and sleep, relaxes the circular muscle of the cervix and thus helps dilatation.

C. H. DAVIS.

**Anderson, L. F.: Clinical Experience with Pituitrin in Obstetrics.** *Buffalo M. J.*, 1914, lxix, 614.

By Surg., Gynec. & Obst.

The author quotes extracts from earlier reports favorable to the wide use of pituitrin in obstetrics. He has used it in some sixty-five cases with no un-

favorable results. He gives a brief history of ten young primiparæ in whom the duration of labor was shortened. He concludes that pituitrin is an especially valuable preparation in the practice of obstetrics, on account of its producing contractions resembling the natural uterine contractions. It is also a satisfactory heart tonic and blood-pressure raising principle, and has considerable effect on the bladder and kidneys, rendering catheterization after childbirth unnecessary in most cases. It should be handled cautiously in cases of myocarditis and marked nephritis, especially in the presence of high blood-pressure.

C. H. DAVIS.

**Weber, F.: The Tampon in Obstetrics and Gynecology; a Clinical and Bacteriological Study** (*Die Tamponade in Geburtshilfe und Gynäkologie. Eine klinische und experimentell-bakteriologische Studie*). *München med. Wchnschr.*, 1914, lxi, 181. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Tamponing the uterus in atonic post-partum hæmorrhage is generally indicated only after other methods have failed; in 15.9 per cent of the cases in the Munich clinic it was followed by a puerperium with high fever. In private houses, where the asepsis is not so strict, it should be avoided as far as possible. The same thing is true in even greater degree in hæmorrhage from placenta prævia; here the tampon should only be used temporarily in transporting the patient to the hospital; the mortality of the cases tamponed outside the hospital was 28.5 per cent.

The tampon is indicated in treating abortion that has already begun; less so in the induction of artificial abortion or premature labor. In gynecology the author recommends the tampon after extensive intra-abdominal operations, and in adherent tumors where accurate hæmostasis cannot be accomplished; he carries the tampon through Douglas' pouch and out at the vagina. True drainage does not take place, since the secretion from the wound becomes stagnant in the upper part of the tampon, while the lower parts remain dry; therefore the tampon is replaced after 20 to 24 hours by a rubber tube.

In a large number of gynecological and obstetrical cases the author has examined the cavity of the uterus, bacteriologically, before the application of the tampon, and has also examined the tampon after 7 to 20 hours. He found that the different kinds of gauze, such as iodoform, xeroform, and dermatol-vioform, were the same in their bactericidal effect. If the cavity of the uterus was sterile they remained sterile for about 7 hours; after that, many bacteria were found.

The development of the bacteria could be restrained for as much as 24 hours only by the use of Merek's perhydrol or a dermatol gauze moistened with iron chloride. In contrast with the antiseptic gauze, the tampons of sterile gauze showed an enormous bacterial content after a few hours.

RITTERSHAUS.



**Schweitzer, B.: Lactic Acid Irrigations in Pregnancy** (Über die Berechtigung der Milchsäurespülungen in der Schwangerschaft). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 334.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The material used by Traugott as the basis of his study of the value of lactic acid irrigations is so different from Schweitzer's material that the difference in their results is very easily explained. Schweitzer points out that the longer the irrigations are begun before delivery in cases with a pathological secretion, the better the prognosis for the puerperium, and that even cases that have been insufficiently irrigated, that is, less than ten times, show better results than those that have not been irrigated at all. Lactic acid irrigations are designed to supplement the autocleansing of the vagina, or to replace the latter if it is lacking.

K. HOFFMANN.

**Richter, J. and Hiess, V.: The Most Favorable Age for the Birth of the First Child** (Über das für die erste Geburt günstigste Alter). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxviii, 625.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In order to determine the most favorable age for delivery the authors studied the enormous material of the Vienna gynecological clinic, including 26,091 primiparæ. They divided the primiparæ into 9 groups, the first group including those from 13 to 16 years, the ninth those over thirty. They found that the duration of labor from the seventeenth to the twenty-fifth year was practically the same; before the seventeenth year it seemed to be a little longer, and after the twenty-fifth it gradually increased and reached its maximum in primiparæ over 30 years old.

Judging from the frequency of operations the physiological limits for the first delivery are 17 and 25, the nineteenth and twentieth years showing the lowest percentage of operations. The younger primiparæ also show a lower maternal morbidity and mortality, the most favorable age being from 21 to 26, the least favorable after 30. There is also the highest percentage of eclampsia in primiparæ over thirty, 1.7 per cent above that age having eclampsia. Placenta prævia also increases in primiparæ over 29, in spite of the fact that it is relatively infrequent in primiparæ. The authors attribute this to hypertrophic or catarrhal inflammations of the endometrium, which would also explain the later conception.

VOIGT.

**Huguier and Lorrain: Hypertrophy of the Breast in Pregnancy** (Hypertrophie mammaire gravidique). *Bull. et. mém. Soc. anat. de Par.*, 1914, xvi, 141.

By Journal de Chirurgie.

A woman of 25 whose breasts were comparatively large became pregnant. By the end of the fourth month the breasts had become enormous, and were very hard with some soft spots. The patient became cachectic and abortion was induced. The

menses reappeared six weeks after the operation, but the breasts remained very large and secreted milk for six months. At each menstrual period they increased in size for a few days. Five years later the patient noticed a lump the size of a nut in the right breast. This increased rapidly in size and the skin over it became purplish.

The breasts hung down as far as the iliac crests. They were soft, but each contained 4 or 5 hard nodules the size of a small mandarin. The nodule first noticed was as large as an orange, round, smooth, and movable over the deep parts. The skin over it was slightly adherent. There were no glands in the axilla and no pain except a little engorgement and formication in the right arm. The general condition was moderately good, the skin yellowish. The breasts were removed at two operations. The result was excellent; the general condition is now good and the yellowish color has disappeared. The right breast weighed 2,157 gms., the left 1,506 gms. Histologically, they showed the lesions of diffuse fibroadenoma, but not a trace of cancer. The authors think that pregnancy undoubtedly has an influence on hypertrophy of the breasts. It is due to an excessive action of certain internal secretions acting on an already abnormal gland.

G. MASSON.

**Beard, J. H.: The Importance of Urinalysis during Pregnancy, and the Significance of the Positive Findings.** *Illinois M. J.*, 1914, xxv, 296.

By Surg., Gynec. & Obst.

The author briefly discusses the importance of urinalysis during pregnancy. He takes up albuminuria, melituria, urea, and ammonia in some detail. He is of the opinion that the importance of the microscopic examination cannot be overestimated. It is, as a whole, more dependable and more readily interpreted than the positive chemical test. The following conclusions are reached:

1. In pregnancy, so-called physiologic albuminuria should be regarded as indicative of renal abnormality and the patient watched accordingly.

2. Recognition and differentiation of the different types of albuminuria are imperative, in order that the members of the toxic group may be discovered early, their gravity appreciated, and proper treatment instituted.

3. The infectious and mechanical types should be carefully observed to detect developing nephritis and to avoid any increased irritation of the renal epithelium.

4. Melituria during pregnancy, in the absence of clinical symptoms, should by no means be interpreted as a sign of diabetes until lactosuria, alimentary and transient glycosuria have been excluded.

5. Very low urea output is a danger signal and the patient should be kept under close supervision.

6. High ammonia may be due to increased total nitrogen eliminated, following nitrogen retention, inanition, catharsis, etc., or it may also result from bacterial contamination of the bladder, and be unaccompanied by any unfavorable symptoms.

7. No great emphasis should be placed on percentage values in determining a radical course of clinical procedure, but we should be guided by the symptoms, as well as the urinary findings.

8. Analysis of the urine is a means of great value in separating the safe from the hazardous cases, and while it may not indicate when to empty the uterus, it should lead to the adoption of such diet, hygiene, and medication as to make intervention unnecessary in many cases; and many children would be born that otherwise would have been doomed.

EDWARD L. CORNELL.

**Tassius, A.: Oxytocics** (Über Wehenmittel). *Arch. f. Gynäk.*, 1914, ci, 513.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Quinine has the best results in the first stage. Pituitrin, pituglandol, glanduitrin, and coluitrin are the best in the second stage. Pituitrin caused continuous contractions in 2 cases, which resulted in one case in the death of the child. In post-partum hæmorrhage 2 ccm. pituglandol and 2 ccm. secacornin had an excellent effect. Among 194 cases in which pituglandol was given there were no cases of continuous contraction. Secacornin works best in post-partum hæmorrhage — not a failure being reported in 185 cases. Secacornin was used intrapartum in 24 cases on Von Herff's recommendation. In 9 cases there were continuous contractions which resulted in the death of the child in five cases and deep asphyxia twice. The doses were  $\frac{1}{8}$  to 1 ccm. Uteramin (para-oxyphenylamine) has a good effect in the post-partum stage.

DEVAUX.

**Gardlund, W.: Extract of Hypophysis as an Oxytocic** (Hypophysenextrakt als Wehenmittel). *Arch. f. Gynäk.*, 1914, ci, 543.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Fifty cases are reported. Larger doses than 0.1 gr. of the infundibular gland have no advantage over smaller doses. Extract of hypophysis is a good, but not altogether reliable, oxytocic. No results can be expected if labor has not already begun. It is not more effective in the second stage than in the first. It strengthens the contractions, the first one generally being cramplike and lasting as long as 45 minutes. It is very painful and may be dangerous for the child, this being especially true in intravenous administration. The effect takes place within an hour; no further effect can be expected after that time. In spite of perceptible strengthening of the contractions, sometimes there was no advancement of labor, as was shown by repeated internal examina-

tions. Especially good is its effect in hastening delivery when atony is not present. The cause of the failures was not explained. The more frequent post-partum hæmorrhages are not directly caused by the extract of hypophysis.

WAGNER.

**Klaus, H.: Use of Narkophin in Obstetrics** (Über Verwendung von Narkophin in der Geburtshilfe). *München. med. Wchnschr.*, 1914, lxi, 186.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports 90 cases. According to previous experiments, narkophin is a useful agent for decreasing pain in labor. It has the advantage over pantopon of being less harmful. When used in moderation, asphyxia rarely occurs. Of the 16 cases of asphyxia observed, only 3 could be attributed to this agent. All the children left the clinic in good condition. When properly used, narkophin has only a slight effect in decreasing the force of the contractions, much less than pantopon. It is used during delivery in the form of injections, 1 ccm. representing 0.03 gr. narkophin, or during the puerperium in the form of tablets, 0.015 gr. narkophin in each, to prevent after-pains.

BENTHIN.

**Schlapobersky, J. P.: Delivery without Vaginal Examination** (Zur Frage der Leitung von Geburten ohne vaginale Untersuchung). *Prakt. Vrach*, 1914, xiii, 20.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

There is always danger of infection in vaginal examination and in 90 per cent of the cases it only serves to follow the normal course of delivery; therefore the author calls attention to the rectal examination previously discussed by Olshausen, Krönig and Fuchs, by which information can be obtained as to the position of the head, the pelvis, the fontanelles, and the skull sutures. Tense membranes and thick edges of the os can also be demonstrated in this way. Frequently the question of how far the os is dilated cannot be determined, but Unterberger shows how by external examination the condition of the contraction ring can be determined, and from this the degree of dilatation of the os judged. If, in spite of combined rectal and external examination, any question of real importance remains unanswered, one vaginal examination is generally sufficient to clear it up, and the further course of the labor can be followed per rectum.

The author has delivered 28 cases in his private practice and 19 in the clinic without vaginal examination, and only once had a rise of temperature to 38.6° on account of retention of remnants of membranes.

EDITHA ROENIG.



## GENITO-URINARY SURGERY

### KIDNEY AND URETER

**Bevacqua, A.: Histological Contribution to the Study of Congenital Unilateral Atrophy of the Kidney** (Contribution histologique à l'étude de l'atrophie congénitale unilatérale du rein). *Fol. urol.*, 1914, viii, 464. By Journal de Chirurgie.

The author describes a very rare case of congenital atrophy of one kidney in a young man of 22 who died of tubercular peritonitis without any history of urinary disease. The right kidney was reduced to the size of a chestnut. It was made up of two parts, one fleshy, almost triangular, which seemed to represent the parenchyma, and a cystic part with irregular cavities containing a liquid made up of albumin, urea, phosphates, etc. There were no traces of the pelvis nor of the calices, nor of the renal part of the ureter. The lower two-thirds of the ureter was well developed; the upper third was transformed into a fibrous cord divided into four or five connective-tissue filaments, which had no connection with the atrophied kidney.

Histological examination showed that the fleshy portion was formed of tubules of varying sizes, ending in cul-de-sacs, lined with a single layer of cubical epithelium, cylindrical or flat. They did not resemble in any way the structure of the normal tubules. In a numerous series of sections Malpighian bodies were found in only one place and they were very much altered. The suprarenal capsules, the testicles, the seminal vesicles, and the prostate were normal. The left kidney was greatly hypertrophied, which malformation was probably due to a mechanical cause. Probably during intra-uterine life soon after the union of the secretory and excretory parts of the right urinary apparatus, the kidney was separated from the ureter. This hypothesis seems to be confirmed by the presence of numerous muscular fibers around the few tubules, which may be considered as débris of the calices and the pelvis.

E. JEANBRAU.

**Kieley, C. E.: A Case of Unilateral Renal Aplasia.** *Lancet-Clin.*, 1914, cxi, 522.

By Surg., Gynec. & Obst.

The author reports a case of this rare condition. He quotes statistics which vary as to the frequency of the cases found at autopsy. As a result of the compilation of these figures there were recorded 18 cases in 36,643 autopsies, making the incident about one in 2,000.

He was able to find 30 cases recorded without hypertrophy, including 3 cases of secondary contraction.

Attention is called to the fact that the mortality

in these cases is due to this condition and is not merely accidental, as shown by the frequency of pathological conditions in the opposite kidney. The author calls attention furthermore to the fact that there are two cases on record in which nephrectomy was done in ignorance of the existence of this condition.

In the reported cases great variation in the condition of the monolateral ureter is reported.

HERMAN L. KRETSCHMER.

**Harpster, C. M.: An Interesting Case of Renal Hæmaturia, with Three Anomalous Renal Arteries.** *Ohio St. M. J.*, 1914, x, 271.

By Surg., Gynec. & Obst.

The case reported by Harpster is a very interesting one, for three reasons: (1) Three years previously, the author had removed the right testicle and cord from this patient for a sarcoma. The onset of the hæmaturia was insidious. (2) A possible traumatic origin of the hæmorrhage might have been explained from the fact that the patient was injured by an automobile, which struck his right side a few days previous. (3) At operation three anomalous arteries were found. As one of the possible causes of the hæmaturia, the author mentions rupture of one of these branches of the renal artery into the pelvis of the kidney. It would have been interesting to have had histological reports of pieces excised from various parts of the kidney, or better still, to have had sections of the entire kidney to determine what pathological changes were present, inasmuch as the author states a soft degenerated spot was found on the upper pole.

HERMAN L. KRETSCHMER.

**Benjamin, A. E.: Cystic Kidney.** *Internat. J. Surg.*, 1914, xxvii, 151.

By Surg., Gynec. & Obst.

The author summarizes briefly the pathology and symptoms of cystic kidney with reports of nine personal cases, on which he had operated. He points out that only by early recognition of the condition can there be hope of benefiting the patient.

H. L. SANFORD.

**Mickaniewski, A.: Surgical Operations in Polycystic Kidney** (Des interventions chirurgicales dans le rein polykystique). *Thèses de doct., Par.*, 1914.

By Journal de Chirurgie.

The author gives a very complete history of surgical operations for polycystic kidney, and reviews at length the question of indications for operation. Like the majority of authors, he believes in the necessity of operation in cases of complications such as suppuration, persistent hæmaturia,

hydronephrosis, displacement of the kidney, anuria, intestinal occlusion, and even intolerable crises of pain.

Before any operation, the soundness of the opposite kidney must be determined by catheterization of the ureters and examination of the urine from each. If the kidney is functioning normally nephrectomy by the lumbar route may be performed; but this operation should be reserved for cases where suppuration or abundant hæmaturia makes any other impossible, for it removes a kidney, part of which was normal, and leaves all the work to the other, which is always slightly diseased. If the opposite kidney is found insufficient, conservative operations should be performed: in the case of suppuration, nephrotomy; in anuria, nephrotomy is the only operation possible, but its value is questionable.

If there is a large displaced polycystic kidney which is movable and painful, nephropexy with decapsulation and excision of the cysts is indicated. In all other cases he rejects the method of puncture and incision of the cysts with marsupialization, and advises partial nephrectomy or, better yet, decapsulation with excision of all the cysts. The latter operation was performed by Taendler in 1894, but has been little used. Only three cases have been published, to which the author adds two unpublished cases. The results were good in all these cases, and he advises the operation.

L. CAPETTE.

**Oertel, H.: A Contribution to the Knowledge of Experimental Nephritis.** *Lancet*, Lond., 1914, clxxxvi, 1450.  
By Surg., Gynec. & Obst.

The author describes the action of certain poisons on the kidney and the results of his experiments on the lower animals.

Lyon, in 1904, showed from his own experiments and the investigations of others that in cantharidin poisoning there occur not only vascular injury and reaction, but a diffuse necrosis of the secretory tubular cells, and that in poisoning by bichloride of mercury glomerular lesions may also be present.

Pearce and Eisenbrey demonstrated that nephrotoxic and hæmolytic immune sera cause changes which by physiological methods present no evidences of vascular injury, but which are anatomically characterized by exudative glomerular lesions of moderate severity. In arsenic poisoning, on the other hand, physiological methods show profound vascular changes, but the anatomical investigation shows little or no vascular lesion.

Aschoff and Suzuki find that uranium and mercury produce necrosis of cells associated with a dropsical hyaline degeneration; cantharidin, on the other hand, produces necrosis with marked swelling and vacuolization of the cells. They come to the conclusion that all poisons act primarily on the parenchyma.

Opie's investigations demonstrated that cantharidin exerts a decided influence on the lymph flow

of the liver which is associated with definite structural changes.

The author has recently carried on an investigation into the structural changes which cantharidin, bichloride of mercury, and uranium nitrate produce in the liver of rabbits, where doses usually employed and sufficient for the production of nephritis had no effect on the liver.

Fifteen animals were employed; of these 7 were poisoned with varying doses of cantharidin of a strength usually employed in the study of experimental nephritis; 4 were in similar fashion poisoned with bichloride of mercury, and 4 with uranium nitrate. A summary of results follows:

Cantharidin produces a rapidly progressing and general parenchymatous degeneration and necrosis associated almost from the beginning with tremendous hæmorrhagic vascular engorgement and cellular exudation; these lead, even in small and moderate doses, to a marked and rapid disorganization of the liver. The accompanying constitutional symptoms are severe and speedily lead to death.

In mercury the picture is controlled by parenchymatous and fatty degeneration with which oedematous swelling is associated. These lead, according to dose and susceptibility of the animal, to rapid or retarded solution of the cell, especially in the central parts of the lobules. Somewhat similar to mercury are the changes brought about by uranium, but a much greater inflammatory oedema or serous exudate and a greater swelling, vacuolization, and cytolysis of the parenchyma in kidney and liver distinguish it from mercury poisoning.

The conclusion may therefore be drawn that cantharidin, mercury, and uranium are not selective poisons, that they affect not only the kidney but the liver, and that they involve in both organs the parenchyma as well as the circulatory system.

In conclusion the author calls attention to pathological changes in the liver of untreated rabbits.

Care must be exercised not to confound, on the one hand, the results of idiopathic infections with the results of experimental procedures and on the other hand the evidences of liver regeneration, occasionally encountered in untreated rabbits, with normal conditions or related to normal liver functions.

THEO. DROZDOWITZ.

**Wegelin and Wildbolz: Anatomical Study of the Early Stages of Chronic Tuberculosis of the Kidneys** (Anatomische Untersuchungen von Frühstadien der chronischen Nierentuberkulose). *Ztschr. f. urol. Chir.*, 1914, ii, 201.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The authors made a very detailed clinical and anatomical study of 15 cases. They say that kidney tuberculosis is demonstrable in the early stages, when functional diagnosis shows only slight alterations in function and when anatomically caseous-cavernous disintegration has affected only a small part of the pyramids and has not penetrated to the cortical substance.



From their research they reach the following conclusions:

Macroscopically, the tuberculosis is mostly localized in the papillæ; this finding is characteristic of the disease. The simultaneous involvement of several papillæ is probable. Tuberculosis of the cortex was found in some cases, but large caseous foci were not found. In 6 cases clearly defined tubercles were found in the kidney pelvis. Microscopically, the authors found that chronic tuberculosis of the kidney is localized primarily in the pyramids; if foci were found in the cortex they were secondary. The lateral surfaces of the pyramids are first involved also the niches of the calices, subepithelial tubercles developing. By secondary cystic dilatation of the collecting tubules, tubercular foci arise in the pyramids themselves. These tubercles in the pyramids run perpendicular to the surface of the kidney, like rows of pearls along the small arteries. The cortex first becomes diseased over the diseased pyramids, or in a circumscribed wedge shape, and becomes atrophic, like an infarct scar.

There are three ways in which it is possible for the bacilli to reach the pyramids and calices: (1) The direct hæmatogenous, which the authors do not think is very important; (2) the indirect hæmatogenous in which the bacilli reach the kidney in the blood stream, are then excreted with the urine, and mechanically remain lying in the niches of the calices, which are not flushed out much by the urine. The authors believe this is the most important way, for in direct infection of the pelvis from the urinary passages the same anatomical picture occurs; (3) the assumption of infection by the lymphatic route is scarcely justified. The urinary, blood, and lymph-passages all take part in spreading tuberculosis of the kidney. Extension by way of the urinary tubules is possible in stasis of the urine. Extension by the blood-vessels is of slight importance. The fact that the tubercles appear like strings of pearls parallel to the small kidney arteries without the walls of the arteries being involved, indicates that extension takes place through the lymph-channels accompanying the arteries. In the neighborhood of the tubercles there are changes in the parenchyma. There is infiltration with plasma-cells and lymphocytes, which is due to toxic effects of the bacilli, and atrophy of the parenchyma, especially in the wedge-shaped foci in the cortex.

From the anatomical picture conclusions can be drawn as to the virulence of the infection. Generally there is a tendency to caseation but in the periphery there are fresh tubercles. Individual cases show slight tendency to caseation, which indicates slow progress of the parenchymatous destruction. In other cases the tendency to caseation is very great; here the process is an extremely acute one. Reparative processes — fibrous transformation of the tubercle — were observed in only one case, where there had been no clinical symptoms of kidney

tuberculosis, and it was found by chance in an autopsy after typhoid. But even this case showed a large caseous focus at the apex of the papilla. The authors admit that there may be a primary localization of the chronic tuberculosis in the cortex, which may result in recovery with the picture of a tubercular contracted kidney, analogous to tubercular cirrhosis of the liver with destruction of the parenchyma.

JANSSEN.

**Suter, F.: Treatment of the Ureter and Healing of the Wound in Nephrectomy for Kidney Tuberculosis** (Zur Frage der Ureterversorgung und Wundheilung bei der Nephrektomie wegen Nierentuberkulose). *Ztschr. f. urol. Chir.*, 1914, ii, 264. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

One of the unpleasant complications in the operative treatment of kidney tuberculosis is the frequency with which fistulæ of the ureter follow the operation. The question of how the tubercular ureter is to be attended to has so far not been definitely answered.

The author describes his experience in 66 cases of operation for kidney tuberculosis, which shows that at least a part of the complications can be avoided. His results in the healing of the wounds have markedly improved with time. At first only a third of the cases healed by first intention; now five-sixths of them do.

The improvement in results is explained partly by the most rigorous asepsis and the greater safety and quickness of the operation — he has done away with involuntary opening of the diseased kidney or ureter — and partly by a very careful and exact method of dealing with the ureter as follows:

The ureter is isolated downward as far as desired. Then it is crushed with a strong, broad forceps and a silk ligature is passed about the upper and lower edges of the crushed area; it is then burned through with the thermocautery. He does not believe in the puncture of caverns. In large kidneys that are located high up under the costal arches he unhesitatingly resects the twelfth rib, and has never seen any bad results from it. In this way he secures enough space to safely remove even very large kidneys. From his experience the kind of disease of the ureter has no effect on the healing of the wound. Success is attained by good technique in separating the ureter and the most careful asepsis during the operation.

OEHLER.

**Robertson, W. E.: Kidney Disease, with Special Reference to the Test for Functional Capacity.** *N. Y. M. J.*, 1914, xcix, 972.

By Surg., Gynec. & Obst.

The author attests the extreme value of the phenolsulphonephthalein test in diagnosis and prognosis of diseases of the kidney. The ease with which the extent and presence of renal disease, "even up to and including the actual development of uræmia" when the usual laboratory and clinical methods of examination are made use of, is shown.



Seven cases are reviewed illustrative of the information to be gained by the use of the phthalein test. The drug is injected intramuscularly and the first specimen collected an hour and 15 minutes later. A second and third collection are made at the end of each succeeding hour. "Normally the largest amount is eliminated at the end of the first hour and 15 minutes, the amount varying from 30 to 50 per cent, and 15 to 25 per cent at the end of the next hour with merely a trace in the third specimen. Abnormally, this condition is reversed, and the greatest amount is eliminated in the second or even the third hour, and in the uræmia or impending uræmia, elimination is often too slight to permit of definite reading in any of the specimens."

FRANK HINMAN.

**Stevens, W. E.: The Comparative Value of Modern Functional Kidney Tests.** *J. Am. M. Ass.*, 1914, lxii, 1544.  
By Surg., Gynec. & Obst.

The author suggests that some of the older tests of renal function have been recklessly and unjustly abandoned in favor of the phthalein test of Rown-tree and Geraghty, and believes that no one test is sufficient. He made comparative studies of the ureal, phloridzin, and phthalein tests after ureteral catheterization. Two ccm. of a 0.5 per cent phloridzin solution were injected intramuscularly immediately following the insertion of the catheters, and while the appearance of sugar was being awaited specimens were collected from each side for microscopical and ureal examinations. A fifteen-minute collection was made, after the appearance of reduction of Fehling's solution, and a quantitative estimation of the sugar output estimated by means of two Lohnstein saccharimeters; six mg. of phthalein were then injected intravenously and, after the appearance of the dye, a fifteen-minute collection and a quantitative colorimetric estimation were made. This gave three sets of figures for each kidney: The urea concentration, the quantitative fifteen-minute output of sugar following phloridzin injection, and the quantitative fifteen-minute output of phthalein. The sugar appearance varied from 9½ to 31 minutes, and the output from .1 to 3.2 per cent—normal cases, presumably, being tested. The author finds that the tests apparently parallel each other, and that the phthalein test, as compared to the phloridzin, is subject to fewer technical errors and takes less time. F. HINMAN.

**Eisendrath, D. N.: The Effect of Injecting Collargol into the Renal Pelvis; Preliminary Note.** *J. Am. M. Ass.*, 1914, lxii, 1392.  
By Surg., Gynec. & Obst.

The author shows that the normal capacity of the dog's renal pelvis is 2⅞ ccm. Twenty ccm. of a 10 per cent solution of collargol injected under a pressure of 100 mm. of Hg. produced death within ten minutes. Autopsy showed collargol in the lungs, liver, kidney, spleen, and stomach mucous membrane and free in the blood-vessels.

In a second experiment 30 ccm. of collargol were injected under 100 mm. of Hg. pressure. The animal died within thirty minutes. In this animal most of the collargol escaped into the tissues around the renal pelvis, but small amounts were found in practically all of the viscera.

V. D. LESPINASSE.

**Stoeckel, W.: Exclusion of the Kidney by Artificial Occlusion of the Ureter** (Über die Ausschaltung der Niere durch künstlichen Ureterverschluss). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 156.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In answer to Bumm's paper, read before the Berlin Gynecological Society, on the cutting off by a ligature and lowering of the injured ureter, Stoeckel criticizes the methods in use where it is impossible to implant the ureter in the bladder or to suture. He rejects implantation of the ureter into the intestine, implantation of the injured into the uninjured ureter, the insertion of grafts, immediate nephrectomy, and formation of a fistula from the ureter through the abdominal wall; and in place of cutting off the ureter by ligation and lowering it, which does not leave the ureter water-tight, he recommends as the best and simplest method the artificial kinking of the ureter by tying a knot in it and ligating beneath the knot. If the other kidney becomes insufficient it is very easy to give local anesthesia, make a small pararectal longitudinal incision, and open the knotted and lowered ureter extraperitoneally. The excluded kidney is still unchanged after four days; after 21 days it loses the capacity to excrete indigo-carmin, and does not lose the capacity for excreting water for months.

NITZSCHE.

**Fischer, A.: Stone of the Ureter in a Child, One and One-Half Years Old** (Uretersteine bei einem 1½ Jährigen Kinde). *Ztschr. f. urol. Chir.*, 1914, ii, 275. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author's case is the third of the kind that has been operated on in childhood. Generally the stones pass from the ureter into the bladder, because of the ease with which the child's ureter is dilated. The symptoms are not violent or especially characteristic. The passage of a stone may lead to the diagnosis, as in this case. Six months before operation there was cramplike pain on voiding the urine and a small stone was discharged; after that the patient was troubled with sleeplessness and sometimes cramplike pains. There were a few white and red blood-cells in the urine. The röntgen picture showed two typical shadows on the left, beside the transverse process of the fourth lumbar vertebra and in the true pelvis, corresponding to the course of the ureter. Israel's incision was made, the firm and somewhat hyperæmic kidney palpated, and the stones found at the site of the shadows, after isolating the entire ureter to the bladder. They were removed through a longitudinal incision. The recovery was uneventful.

SCHMIDT.



**Furniss, H. D.: Supernumerary Ureter, Opening Extravesically.** *Surg., Gynec. & Obst.*, 1914, xviii, 584.  
By Surg., Gynec. & Obst.

The condition in the case was suspected from the characteristic history; dribbling since birth and voiding normally. The aberrant ureter was discovered with difficulty and only after an injection of indigo-carmin. At the operation it was found that the distal end of the ureter formed a fusiform sac an inch and a half long; back of this the ureter was thickened and easily dissected out for another inch and a quarter. It was implanted into the bladder just to the inner side and back of the normal ureter of that side. The necessary room for the performance of this operation was obtained by a pararectal incision through the vagina. The result was satisfactory.

Supernumerary ureters are quite frequent, but those opening extravesically are rare, only nineteen others having been reported.

An analysis of the symptoms, physical findings, operative procedures with results and references to the literature are given. From the study of his and other cases Furniss believes implantation through the vagina to be the operation of choice.

#### BLADDER, URETHRA, AND PENIS

**Swan, R. H. J.: Tumors of the Urinary Bladder.** *Lancet*, Lond., 1914, clxxxvi, 1309.  
By Surg., Gynec. & Obst.

Swan covers the subject from his own experience together with fifty-eight cases that were then under his observation.

He considers the etiology as practically unknown. In that relation, however, inflammation, bilharzial ova, and workers in aniline dyes are mentioned. Outside of villous papilloma (benign) and carcinoma, other tumors of the bladder are considered rare.

Especial stress is laid upon the possibility of a non-malignant villous papillomata showing malignancy long after operation. He reports five cases — 8, 4, 2, 1½ and 1 years — in which sections showed non-malignancy when the tumor was removed, yet became malignant afterward. He looks with suspicion on any bladder papilloma covered with stunted villi or which have not those very delicate pedicles.

Carcinoma is claimed to be three times as prevalent as papilloma; the supposition is made that heretofore they have been looked upon as villous (benign) papillomata, instead of villous carcinoma.

The symptom hæmaturia is considered a differential point of distinction in favor of a papilloma, when it entirely ceases at intervals. Cystitis is frequently the associate of carcinoma, yet foreign to papillomata.

A case is reported whereby a ureter block occurred from a papilloma engaging the ureteral mouth from the cystic side. The kidney obstruction which followed was relieved upon the removal of the villous papillomata.

An unusual case is reported of villous carcinoma metastasis in a young man following eighteen months after an attempted removal of the cancer. The trunk of the body from the umbilicus to the knees, including the bony wall as well, with the exception of the abdominal viscera, was invaded.

In twenty-three epitheliomatous cases reported, seven were operated upon — two being complete resections. Recurrence occurred outside of the bladder, in one in eighteen months, in another in twenty months.

Swan's use of 50 mgs. of radium within the bladder for twelve to twenty-four hours has not resulted favorably, yet he considers it applicable to non-operative cases. CHARLES E. BARNETT.

**Werelius, A.: Traumatic Detachment of the Bladder from Symphysis Pubis, with Complete Severance of Urethra; Use of Labia Minora as a Substitute for Necrosed Anterior Vaginal Wall.** *J. Am. M. Ass.*, 1914, lxxii, 1722.  
By Surg., Gynec. & Obst.

The author reports a case of pressure necrosis of the anterior vaginal wall, due to prolonged and difficult instrumental labor, in which the urethra had completely disappeared and the bladder was entirely detached from the symphysis, and was suspended only by the ureters and the peritoneum covering its posterior surface. The case was seen five months after labor and gave a history of complete incontinence of urine since delivery, with profuse vaginal discharge. When seen the patient was in a general run-down condition and had lost considerable weight. Vaginal examination revealed an almost complete absence of the anterior vaginal wall and the bladder could be protruded far out of the vagina. There was no sign of any urethra. Two unsuccessful attempts were made to close the opening by bringing the edges of the remains of the vaginal wall together, after freshening and undercutting them. The defect was finally closed by freshening and incising the edges of the labia minora along the outer and upper borders and dislocating them inward over the vaginal defect and suturing with chromicized catgut. C. R. O'CROWLEY.

**Martin, C.: The Correct Interpretation of Bladder Symptoms.** *Med. Fortnight.*, 1914, xlv, 177.  
By Surg., Gynec. & Obst.

The author lays stress on the fact that bladder symptoms have an antecedent mechanical or nervous etiology. He says in the vast majority of cases it is mechanical. He states that the three symptoms which force the patient to the physician are frequency, pain, and hæmaturia. He emphasizes the fact that the extravesical causes of these symptoms should be carefully studied and removed, if possible.

Of the intravesical causes of bladder symptoms the author discusses, first, stone in the bladder and lays stress on the frequent use of the cystoscope for the determination of the same. He also states that

frequently the etiology of stone is an enlarged prostate and that it will be futile to remove the stone in the bladder without removing the prostate.

The author next discusses tuberculosis of the bladder, laying stress upon the point that an irritable bladder is frequently the first symptom of tuberculosis and quotes Karo as saying that oftentimes nocturnal enuresis, and this particularly in the case of young anæmic children, may be the single clinical symptom of a beginning tuberculosis the final determination of which must be made by the laboratory and the cystoscope. The author further states that an irritable bladder may show no cystoscopic findings whatever, except, possibly, the halo described by Thomson-Walker; that is, the intimate connection of the ureter's blood supply with that of the area immediately surrounding the ureteric orifice.

He further discusses the question of tuberculosis of the prostate as a cause of cystitis, and states that a careful rectal palpation will frequently develop nodular prominences, or a thickening at the end of the ureter may be felt per rectum or per vagina.

The author then discusses the effect of gonorrhœal infections upon the bladder and says that a general gonorrhœal cystitis is rare, but infection of the trigone is frequent. He says that these cases offer no difficulty of diagnosis on account of the sudden seizures of pain, frequency, urgency, and possibly a little blood following micturition.

The author discusses the question of stone in the prostate as a cause of bladder symptoms and recommends the free use of radiology in the diagnosis of these cases. He also touches on the question of hypertrophy of the prostate as frequently causing bladder symptoms.

The last half of the paper is given up to the discussion of the question of vesical symptoms consequent upon the spinal lesion. He emphasizes the fact that great care must be used in the diagnosis and recognition of these cases and that nervous diseases producing bladder symptoms should always be taken into consideration in the examination of all bladder diseases, because great harm may be done to the bladder whose incompetency is due to a spinal lesion. The author lays great stress on the danger of catheterization in these cases producing an inflammation from which the patient never recovers.

The author likewise discusses the verumontanum and its inflammatory diseases frequently causing bladder symptoms and recommends a careful study of this organ as well as the seminal vesicles in every case of bladder disease.

A. C. STOKES.

**Squier, J. B.: Surgery of the Hour-Glass Bladder.**

*N. Y. M. J.*, 1914, xcix, 1026.

By Surg., Gynec. & Obst.

Squier has reviewed the literature concerning the cure of vesical diverticula by operation and has further contributed toward the technique. Chute, Lerch, Lower, Bryan, Bergener, and Beer have either collected or reported cases. The one reported

by the author had a marked pyuria, with a bacillus coli infection. The amount of residual urine was thirty ounces. Cystoscopy showed a diverticulum opening. Stereoscopic radiographical examination with 25 per cent argyrol outlined an immense diverticulum.

Upon operation, the diverticulum was found strongly adherent to the anterior walls of the rectum and sigmoid. The bladder was opened and two intestinal clamps placed so that one blade of each was in the bladder and one in the diverticulum, thus approximating the posterior wall of the bladder to the anterior wall of the diverticulum. The two walls were then divided between the clamps, and the cut edges sewed together with continuous catgut sutures. The upper part of the diverticulum was then excised and drainage established in the bladder and prevesical space.

Two months later the residual urine was from one to two ounces, while the capacity of the bladder was twelve ounces.

The author's conclusions are that in an hour-glass bladder, division and suturing is the best method, especially as this does not necessitate transplantation of the ureter; but in some diverticula, excision by Lower's method is the better one.

C. D. PICKRELL.

**Dor, H.: Urethrectomy without Suture, in Stricture of the Perineal Urethra** (Essai sur l'urétréctomie sans suture dans les rétrécissements de l'urètre périméal). *Thèses de doct.*, Par., 1913.

By Journal de Chirurgie.

Dor criticizes the results of Heitz-Boyer's urethrectomy and describes a method which Escot has used 13 times. In this method the upper wall of the canal is spared.

The steps of the operation are as follows: (1) External urethrotomy incision, isolation of the fistulous tract, and external liberation of the urethra and periurethral tumor; (2) longitudinal incision of the urethra and resection with curved scissors of all the fibrous tissue including the urethral wall itself, only the upper wall being spared; (3) a rubber sound is passed through the meatus toward the bladder; (4) the skin wound is sutured at the angles and the remainder left open. The wound is tamponed, the tampon being changed the fourth day. The eighth day the sound is removed and the patient urinates entirely through the perineum. Every two days a bougie is passed, beginning at 40 to 44 and in a little while reaching 60. Free irrigation of the urethra and bladder is performed at every dilatation.

In the cases reported by the author, cicatrization took place between the twentieth and fiftieth days. In only one case a small fistula persisted, which closed spontaneously about the tenth month. Examination of the patients at a late date showed that they could not be considered radically cured. They must be watched and submitted to catheterization.

GASTON PICOT.



**Roth, M. and Mayer, T.: The Practical Value of Posterior Urethroscopy.** *Am. J. Urol.*, 1914, x, 214.  
By Surg., Gynec. & Obst.

The first and perhaps most important cause of pathological findings in the urethra is gonorrhœa. Here we may have either a "soft" infiltration, comparable to that found in the anterior urethra, in which the internal sphincter is swollen and the colliculus inflamed and presenting one or more projections, or a "hard" infiltration resulting in stricture formation, which is much less common. Proliferative changes represented by the formation of raspberry-like polypi are frequent occurrences at the verumontanum. In chronic posterior gonorrhœa such changes were present in two-thirds of the cases examined and, what is more, they were present in almost the same proportion in those clinically cured of the condition.

Objective symptoms such as persistent discharge, terminal hæmaturia and hæmatospermatorrhœa may or may not be associated with the above pathological conditions. Conversely, these conditions may exist without any symptoms whatever, and in 46 per cent of the cases without the existence of any antecedent gonorrhœa.

The authors also found numerous abnormalities in the urethras of patients suffering from symptoms of sexual neurasthenia, such as erections and pollutions. They also found various types of prolapse of the mucosa and of granulomas in the membranous urethra. However, they do not regard these changes as the cause of the symptoms (pollutionis, etc.), but rather as the result of the accompaniment thereof. In support of this view they point to the favorable results obtained by therapy, such as internal medication, which is not directed toward the relief of the local conditions, as well as the failure of local treatment in some cases. In all such cases the authors feel that there is an unsatisfied libido, which causes an increased sexual irritability resulting in masturbation, thus in turn producing congestion of the parts and the pathological pictures above described. Erections and pollutions may result from a general psychopathic constitution without any local changes whatever. Similar findings in the posterior urethra have been described as the cause of sexual impotence. That this condition results from the exhaustion of a previously overexcited erection center, as suggested by Finger, is not accepted by the authors.

By first subjecting all patients to general measures, and not proceeding at once to the local treatment, the authors were enabled to divide their cases into two classes. The first consisted of real sexual neurasthenics who complained of indefinite symptoms; burning in the testicles, feeling of heat and pressure in the urethra, tearing in the inguinal canal, etc. In 80 per cent of these subjects the posterior urethra was pathologically altered as in gonorrhœa. In these men the sexual symptoms were merely a part of an outspoken general neurasthenia. General measures, or local applications which did not in any

way affect the pathological picture, often caused a cure. The benefits of cauterization, etc., were but temporary. The second class comprised those who complained definitely of frequency, urgency, and pain during urination. In 60 per cent of these cases there were pathological changes in the posterior urethra and here they were actually the cause of the symptoms, for their removal was in the great majority of instances followed by a permanent cure.

The authors conclude that though modern endoscopy has thrown much light on many difficult problems it has led us to overestimate the importance of the local lesion, especially in cases of sexual neurasthenia.

H. A. MOORE.

**Nové-Josserand, G.: Late Results of Urethroplasty by Tunneling and Skin-Grafting, in Severe Forms of Hypospadias and Epispadias** (*Résultats éloignés de l'urétroplastie par la tunnellisation et la greffe derma-épidermique dans les formes graves de l'hypospadias et de l'épispadias*). *J. d'uro.*, 1914, v, 393. By Journal de Chirurgie.

The author studied the permanent results of his method, analyzing 21 cases that were treated more than two years ago. Seven were penile hypospadias, 6 penoscrotal, 2 scrotal, 3 perineal, and 3 epispadias. Some were operated on as long as 12 years ago, the average being 6 to 7 years. The canal in almost all cases was successfully reconstructed by the skin-graft, though the caliber was reduced — 10 to 13 by Charrière's sound — and it often had to be enlarged by internal urethrotomy. The urethra is elastic enough not to interfere with erection or urinary function, and fistulæ are exceptional since the author has used his new technique. He has observed the new urethra enlarge spontaneously in three cases — an important fact, as it shows that an artificial urethra formed by skin-grafting may take part in the general growth of the patient.

In three cases the caliber of the urethra, examined 4 to 7 years afterward, had remained stationary without causing any functional trouble. In two of these cases the new canal had passed successfully through an attack of gonorrhœa. In two cases there was a temporary stricture, which yielded after a few dilatations; in 4 cases the stricture was permanent. The development of the stricture was slow, but dilatation, and internal urethrotomy, only produced temporary improvement.

J. TANTON.

**Stark, S.: Technique Employed in Excision of a Carcinomatous Urethra.** *Surg., Gynec. & Obst.*, 1914, xviii, 632. By Surg., Gynec. & Obst.

Stark describes the technique employed in the excision of a carcinoma of the urethra. The tumor involved the whole urethra including the internal urethral orifice. The technical features were as follows: A curved incision was made directly under the arch of the pubes about 4 cm. in length and continued in depth until the retropubic space was reached. From this a longitudinal incision through the vaginal wall was made on either side of the in-

durated area in a posterior direction beyond the limitation of the involved tissues.

Two vaginal flaps were then deflected by dissection laterally toward the ischiopubic rami, exposing the triangular ligament underneath. Curved hæmostats were then placed from the retropubic space downward on the triangular ligament close to the ischiopubic rami just before it was cut through, first on one side and then on the other, until the whole tumor mass was disconnected. The object of this was to anticipate hæmorrhage from the branches of the internal pubic vessels coursing through the triangular ligament, which proved very satisfactory. The liberated tumor mass was then incised along its anterior surface into the urethral canal and bladder, which facilitated its final removal under ocular supervision. The vessels included in the hæmostats were ligated by transfixion and the bladder orifice sutured to the vaginal wall in such a manner as to leave an opening only large enough to admit the introduction of a No. 10 soft rubber catheter, which was fixed *in situ* for permanent drainage by means of a suture to the vagina. Anterior to the vesicovaginal opening the vaginal flaps were brought together in the median line by chromic acid suture, leaving a space under the pubic arch for drainage of the rather large retropubic cavity. The inguinal glands of both sides were likewise excised. Control of urine resulted.

**Greensfelder, L. A.: Carcinoma of the Penis.**  
*Internat. J. Surg.*, 1914, xxvii, 163.

By Surg., Gynec. & Obst.

The patient, 49 years of age, complained of a growth on the end of the penis of four months' duration. Examination of the glans penis revealed a growth, 4 cm. in diameter, which was hard and smooth, being chiefly on the under surface. The left inguinal glands were large and hard and the attempt to pass a sound failed. The penis was amputated about 3 cm. from its base. The laboratory report disclosed epithelioma of the glans penis.

The author, reviewing the various reports, as to whether or not there is increased frequency of carcinoma of the penis in proportion to whether the patients are circumcised or not, concludes that circumcision must be a great protection against carcinoma of the penis. He quotes a report from the Madras General Hospital of fifteen years ago, prepared by a British surgeon who was in charge of the institution for many years, in which Mohammedans who were circumcised, and Hindus who were not, were admitted in about equal number. In 202 cases of carcinoma of the penis, only one occurred in a circumcised Mohammedan.

I. S. KOLL.

**Lionti, G.: A Case of Double Penis** (Ein Fall von Penisverdoppelung). *Deutsche med. Wchnschr.*, 1914, xl, 393.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

A 21-year-old man had on the left side of his apparently normal glans penis a second smaller one

that was somewhat higher up and more anterior. The apex of this second glans was provided with a small cutaneous orifice, from which urine or semen had never been discharged. Palpation showed the presence of a second penis, which was somewhat stunted. The second penis was removed by operation without difficulty. Its urethra ended in a blind pouch at a depth of 10 cm.

STETTINER.

## GENITAL ORGANS

**Hardouin: Cancer of the Testicle Operated upon by Simple Castration; Recovery without Recurrence after Eight Years** (Cancer du testicule opéré par castration simple. Guérison au bout de 8 ans). *Bull. et mém. Soc. anat. de Par.* 1914, xvi, 148.

By Journal de Chirurgie.

Hardouin reports the history of a man of 48 who was operated upon shortly after the appearance of a tumor. Histological examination showed a typical seminoma, very recent, since it was small in size and the seminiferous tubules were scarcely changed. Chevassu believes that a third of the patients with cancer of the testicle operated on by simple castration may be considered cured. Hardouin thinks this figure a little too optimistic, but that it should be remembered at this time when a more extensive and dangerous surgical treatment for cancer of the testicle is being proposed, which includes the removal of the tumor and its lumbar glands. It is probable that the most important factor in cure is the removal of the cancer at an early stage.

**Hardouin and Potel: Two Cases of Tumor of the Testicle in Children** (Deux observations de tumeurs du testicule chez l'enfant). *Bull. et mém. Soc. Anat. de Par.*, 1914, xvi, 150.

By Journal de Chirurgie.

The first patient had had a tumor of the right testicle since he was two months old. At eight months it began to grow rapidly, became as large as a hen's egg, smooth, without nodulation or adhesions. The gland was removed. Examination showed that it was a mixed tumor formed of tubes and cysts with cylindrical epithelium, and of fibrous and cartilaginous tissue.

The second patient was 7 years old. He had a tumor of the right testicle as large as an adult's fist, non-adherent, not painful. Numerous subcutaneous vessels were visible. The tumor was removed. It was whitish and quite hard; histological examination showed that it was probably a seminoma. This variety of tumor is extremely rare in childhood.

G. MASSON.

**Wilson, H. W.: A Post-Graduate Lecture on New-Growths of the Testicle.** *Clin. J.*, 1914, xliii, 300.

By Surg., Gynec. & Obst.

The author emphasizes predominance in ectopia, and the dangers of this last-named condition becoming malignant. Carcinoma and sarcoma originate in the testes, are highly malignant, spread via



the lymph-vessels to the retroperitoneal glands — occasionally reaching the superclavicular group by way of the thoracic duct — and via the blood-vessels to the liver and the lung. Metastases may occur extensively even though the original tumor remains small. Carcinomata frequently penetrate the tunic, giving rise comparatively early to fungiform masses on the surface. Sarcomata show a tendency to be confined by the tunic. In both classes cystic degeneration is common, giving rise to collections of fluid within the tumor mass, or often to hydrocele. Microscopically, these tumors are very atypical; occasionally the carcinoma may adhere to the columnar or spheroid type, and the sarcoma to the round or mixed-cell type. These growths are apt to be soft and nodular, but occasionally smooth and hard.

Embryonic tumors, so called because of their origin from embryonic tissues in the mediastinum, are not uncommon. They have a tendency to flatten out the testicular body, and are of slow growth, requiring three to six years for their development. They may assume a rapid malignancy, and this is especially true in the teratomata, in contrast to the adenomata, which malignancy is to be suspected if there are to be seen masses of nucleated protoplasm similar to deciduoma malignum. Endotheliomata are very rare.

The embryonic tumors are to be found from puberty up to thirty years, sarcoma between the ages of twenty and forty, carcinoma between the ages of thirty and sixty. There is an early loss of testicular sensation, and a sense of a dragging weight, with but little pain until the skin is involved. Palpation shows an enlarged testis, with flattened epididymis. Hydrocele is often present. In abdominal cases of ectopia, the first manifestation of the malignancy is frequently intestinal obstruction. Life expectancy is only about eighteen months, and only a small percentage of cases have remained free from recurrence after three years. Extensive operation in an attempt to eradicate the paths of lymphatic invasion gives discouraging results. Experience has shown that operative interference which does not extend beyond the external ring gives better results, frees the patient from his pain and annoying ulceration, painless death ensuing soon from metastases. L. L. TENBROECK.

**Corner, E. M.: Further Experiences in the Treatment of Imperfectly Descended Testicles.** *Brit. M. J.*, 1914, i, 1120. By Surg., Gynec. & Obst.

The author states that when confronted with an imperfect descent of the testicle, the first factor to determine is whether the condition is temporary or permanent. If temporary, no treatment is necessary. If permanent, as evidenced by the recognition of an accompanying hernia, or the fact that the patient has reached the age of seven years, active treatment is necessary.

The author recommends great gentleness in separating the cord from the hernial sac. He also

states that frequently such testicles atrophy even after they have been brought well down into the scrotum.

The author states that testicles returned to the abdomen do not become malignant; also that testicles returned to the intra-abdominal position maintain their power of internal secretion, but lose the power of external secretion.

In the author's work for the past ten years his cases have been treated as follows:

Orchidopexy, about 10 per cent.

Orchidocelioplasty, about 50 per cent.

Orchidoplasty, about 40 per cent.

The treatment suggested for the condition of imperfectly descended testicles can be summed up from the point of view of the age of the patient, as the condition is a congenital one.

At birth, and up to the age of five years, the case should be watched to decide whether the testicle is merely late in its descent or not. If a hernia is seen to be present an operation should be performed, concluded by orchidoplasty.

From 7 to 20 years of age, an operation should be performed whether a hernia is present or not. Either orchidoplasty, orchidectomy, or orchidocelioplasty may be done.

Above 20 years of age orchidectomy should be done. V. D. LESPINASSE.

**Thompson, R.: An Operation for Undescended Testicle.** *Lancet*, Lond., 1914, clxxxvi, 1535.

By Surg., Gynec. & Obst.

The author enlarges the scrotum by inserting into it an elliptical flap cut from the edge of the hernial incision. This flap is turned down into the scrotum and sutured into the scrotal wound. By this means the scrotum is enlarged, and, as it were, stiffened by a portion of tissue which contains no "dartos" muscle, and therefore remains uncontracted. The simplicity of the operation and its successful results in two cases caused the author to place it on record. V. D. LESPINASSE.

**Clark, J. B.: The Surgical Treatment of Acute Gonorrhœal Epididymitis by Epididymotomy.** *Ann. Surg.*, Phila., 1914, lix, 739.

By Surg., Gynec. & Obst.

For those cases of epididymitis which are accompanied by unusually severe pain, with considerable swelling and high temperature, the author recommends his modification of the Hagner operation. The operative field is sterilized with two and one-half per cent tincture of iodine, and an oblique incision one and one-half inches long is made downward and forward over the epididymal swelling. The incision is carried down to the tunica vaginalis, which is opened the length of the skin incision. The edges of the tunica are picked up by hæmostats. The thickened fibrous tissues covering the prominence of the epididymis are incised for one-half an inch over the prominence of the swelling, and a probe is passed gently in several directions into the substance

of the epididymis. If pus is present it is easily drained off. In all cases relief of tension and drainage was established.

The advantage of this operation is the lack of traumatism to the testicle, as this organ is not delivered or the parts bruised by handling. In cases where the body of the epididymis or globus major are involved, a freer incision or turning out of the testicle will be found to be best. A wick made of rubber dam serves as drainage. The author recommends one or two deep sutures of catgut, and two or three silkworm-gut sutures for the skin. The drain is removed in forty-eight hours. On the fourth day the patient is allowed to get up; on the fifth day the stitches are removed. Six cases of bilateral epididymotomies are cited from the literature. Two of these patients have married, and each has borne two children.

H. A. KRAUS.

**Steiner, P.: The Surgical Treatment of Atrophy of the Prostate** (Die chirurgische Behandlung der Prostataatrophie). *Ztschr. f. Urol.*, 1914, viii, 148. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author had five cases in which the functional disturbances characteristic of hypertrophy of the prostate were present, but in which the prostate was found to be small, weighing from 3 to 5 gms. Its enucleation by Freyer's method was difficult, because of induration of the periprostatic tissue. Histological examination showed atrophy of the glandular tissue. There was a history of gonorrhea in all the cases. Palpation through the rectum against a sound introduced into the urethra was especially characteristic in the diagnosis. In all cases ectomy was completely successful, recovery persisting after periods varying from 9 to 12 months.

SCHULTZE.

**Keyes, Jr., E. L.: The Mechanism of Prostatic Retention.** *Am. J. M. Sc.*, 1914, cxlvii, 673.

By Surg., Gynec. & Obst.

The author distinguishes two clinical types of prostatic retention: chronic incomplete or complete retention, and acute complete retention. Retention represents the interaction of two forces, the bladder muscle and the obstruction.

In considering the action of the bladder muscle the author considers the condition of the nervous mechanism as well as the condition of the will. He believes that the progressive weakening of the bladder muscle is the main agency in the rapidity or slowness with which a patient passes from the first to the third degree of retention. A strong muscle will fight longer against an obstruction. That the muscle is not the only element in this case is shown by the fact that the "blotting-paper" bladder is little more liable to incomplete relief by prostatectomy than is the bladder with a normal muscle. The author states his belief that in paralysis of the bladder muscle, as in tabs, the resulting retention is not solely due to weakness of the muscle, as the Chetwood operation may result in improve-

ment. He cites cases proving this. He coincides with the opinion of Alexander in ascribing the retention of urine in typhoid and other wasting diseases to actual muscular weakness combined with weakness of the will, and cites cases.

Under obstruction the author considers the enlarged prostate and the bladder neck. He believes with Sir H. Thompson that not more than half of the men whose prostates are enlarged suffer from retention, and that retention occurs without hypertrophy. He believes that the size of the prostate has nothing to do with the amount of residual urine.

The rôle of prostatic hypertrophy in retention he believes to be as follows: Hypertrophy is not of itself sufficient cause for retention. In order to cause retention, hypertrophy must interfere with the outflow of urine and may be due to deformity of the bladder neck or to actual compression of the urethra. This compression of the urethra is not usually an important factor, as the urethra is usually dilated and a catheter is not obstructed in the prostatic urethra, from the membranous portion to the neck.

The compression of even greatly enlarged lateral prostatic lobes probably has little or no effect on the outflow of urine. The author believes that the obstacle is much the same whatever the cause, whether it be middle lobe, lateral lobe, or general hypertrophy, or contracted bladder neck. This obstacle is the muscular ring at the bladder neck, which normally is an elevated ridge most prominent on the floor of the urethra, because the roof is more fixed by means of the puboprostatic ligaments. In pathological conditions this bar of bladder neck rises up on the floor of the urethra as an abnormal obstruction. This is the mechanical cause of prostatic retention. In explanation, the author assumes that as the bladder empties itself the trigone is somewhat elevated, forming the flare of the funnel, which in the normal bladder begins in the prostatic portion, and the remainder of the bladder closes down upon this funnel, the lowest and highest points in the bladder cavity lying posterior to the trigone and being emptied last. In retention the funnel is an inadequate one. The bladder neck fails to open as it should, and the result of the effort to squeeze out the last drops of urine is to close the bladder neck. The closure should be interpreted not as a sphincteric gripping but as the driving of the prominent lower lip of the bladder neck against the upper wall of the prostatic urethra, in the form of a valve. The harder the patient strains, the tighter the valve closes.

Chronic retention is due fundamentally to an inability of the bladder sphincter to open until the bladder is partially full. Acute complete retention is due to a congestion or spasm at the bladder neck of such intensity as to apply the posterior lip of the sphincter, against the anterior, even when the bladder is full. Various combinations of obstruction, congestion, and spasm produce the many variations in the clinical phenomena of prostatic retention and the gradual progress of the increase in the amount of



retention of urine as the time goes by is largely due to a gradual decrease in the strength of the bladder muscle. Prostatectomy should be only a means to an end, that end being removal of the obstacle at the bladder neck, although all other obstructions should also be removed. Technically, the perineal route is at a disadvantage and the suprapubic is mechanically superior.

H. J. POLKEY.

**Thomas, J. L.:** Note on a New Combined Method of Prostatectomy. *Lancet*, Lond., 1914, clxxxvi, 1456. By Surg., Gynec. & Obst.

The author follows a rather singular technique in carrying out his suprapubic prostatectomy. As soon as the bladder is opened and emptied of urine, he pours about an ounce of pure tincture of iodine into the bladder before proceeding to enucleate the prostate. He then injects tincture of iodine through the meatus along the urethra into the prostatic bed. The operation is concluded by perineal drainage.

HERMAN L. KRETSCHMER.

**Legueu and Morel:** Value of Eosinophilia in the Diagnosis of Surgical Diseases of the Prostate (Valeur de l'éosinophilie dans le diagnostic des affections chirurgicales de la prostate). *Arch. urol. de la clin. de Necker*, 1914, i, 295.

By Journal de Chirurgie.

In 1913, Morel and Chabanier found eosinophilia in cases of adenoma of the prostate. Legueu and Morel have pursued this research further in order to find whether the examination of the blood could be utilized clinically in prostatic cases. They report the results of blood examination in 85 patients with different diseases of the prostate.

1. In 40 cases of adenoma of the prostate, even when there were no septic complications there was a leucocytosis that amounted on an average to 12,000 per ccm. The polynuclear eosinophiles especially were increased; in 36 cases out of 40, that is, 90 per cent, they were increased to 5 per cent from the normal 2 per cent. The eosinophilia disappeared when the adenomata were removed. The eosinophilia is due to a local reaction of the prostatic urethra. Verliac found eosinophiles scattered through the suburethral zone in sections of prostatic adenomata. This eosinophilia depends on the mere presence of the adenoma and is not in proportion to its size.

2. The blood in cancer of the prostate showed an increase in polynuclears to 87 per cent, and a decrease in the eosinophiles to 0.4 per cent. Thus the blood picture in cancer of the prostate with hypo-eosinophilia is sharply distinguished from that of adenoma which shows hyper-eosinophilia. Examination of the blood may serve to make the differential diagnosis between adenoma and cancer of the prostate in difficult cases. Comparing the clinical and dermatological diagnosis and the later microscopical findings, their results were as follows: Of the 40 adenomata, 39 had been so diagnosed clin-

ically. In 35 cases the blood diagnosis confirmed the clinical diagnosis of adenoma, 4 times it was doubtful, and it showed adenoma in the case which had been diagnosed clinically as cancer. Of the 31 cancer cases reported, the clinical diagnosis had been cancer in 18 and adenoma in 13. Blood examination confirmed the 18 clinical cases; in 10 cases it corrected the clinical diagnosis of adenoma; in three cases both clinical and blood diagnoses were wrong. The authors conclude that blood examination often confirms the clinical diagnosis of adenoma of the prostate, and often confirms or rectifies the clinical diagnosis of cancer. MAURICE CHEVASSU.

## MISCELLANEOUS

**Eisendrath, D. N.:** The Value of Radiography in the Surgery of the Urinary Tract. *J. Mich. St. M. Soc.*, 1914, xiii, 287. By Surg., Gynec. & Obst.

Eisendrath calls attention to the great addition in diagnostic technique offered by the X-ray, the shadowgraph, the ureteral catheter, and collargol injection of the ureter and renal pelvis. He emphasizes the necessity of careful preparation of the patient before the radiography, so as to eliminate as much as possible any extraneous shadow due to accumulations within the digestive tract, and explains in detail the variations in technique in pyelography and the use of the shadowgraph catheter. The article, which is illustrated with helpful schematic drawings of the regions examined, accentuates the necessity for careful differential diagnosis between lesions within and of the urinary tract and those without, which are likely to cause confusion by reason of the similarity in shadows as shown on the röntgen plate. Proved extrarenal shadows are from—

1. Calcified areas due to tuberculosis of the kidney.
2. Areas of chronic induration of the kidney.
3. Atheromatous patches on the renal artery.
4. Calcified retroperitoneal glands.
5. Areas of ossification in the tips of the transverse processes of the lumbar vertebrae, in the last costal cartilages, or of the last two ribs.
6. Gall-stones, pancreatic calculi or calcified areas in cancer of the head of the pancreas, or enteroliths in the appendix.
7. Calcification of ulcerations in the walls of the ureter.

Extra-ureteral shadows are due usually to one of the following:

1. Calcified retroperitoneal or mesenteric glands.
2. Enteroliths in the intestine or the appendix.
3. Areas of calcification in sacrospinal ligaments, myomata of the uterus, in dermoid cysts, in the ovaries, in the prostate, or in the vas deferens.
4. Phleboliths in the pelvic veins or areas of calcification in the iliac vessels.
5. Calcification in the wall of the ureter.

J. S. EISENSTAEDT.

# SURGERY OF THE EYE AND EAR

## EYE

**Ellett, E. C.: Some Remarks on Glaucoma. J. Tenn. St. M. Ass., 1914, vi, 461.**

By Surg., Gynec. & Obst.

Ellett finds the tonometer an instrument of precision for estimating the intra-ocular tension; 25 to 45 mm. is placed as equivalent to +1, 45 to 65 to +2, and above this to +3. Iridectomy leaves little to be desired in acute glaucoma, while an excision, in some fashion, of a piece of the sclera best meets the indications in the chronic form. The latter cases may sometimes be held at a standstill by the persistent use of myotics. FRANCIS LANE.

**Welton, C. B.: Glaucoma as a Contributing Etiological Factor in Insanity, with Report of a Case. Ophth. Rec., 1914, xxiii, 217.**

By Surg., Gynec. & Obst.

To relieve the intense pain in the eyes, the family physician administered opiates for several months or until the patient became blind. The patient's history was good and no history of insanity in the family could be obtained. The patient, aged 69, had never previously had any disease of the eyes.

The tension taken with the Schiötz tonometer, measured in the right eye 70 mm. Hg., that of the left 75 mm. Hg. An Elliott operation afforded the patient relief from the pain. GUSTAVUS I. HOGUE.

**Fox, L. W.: Modern Operations for Glaucoma, with Especial Reference to the Elliot Operation of Corneoscleral Trephining. Mil. Surgeon, 1914, xxxiv, 301.**

By Surg., Gynec. & Obst.

Fox refers briefly to the most important of the modern methods of procuring a permanent filtering cicatrix for the relief of glaucoma. Elliot's preparatory handling, steps of operative procedure, and toilet of the wound are concisely described. No operation for chronic glaucoma has given the author greater satisfaction than the corneoscleral trephine. The treatment of the conjunctival flaps, however, was modified in several instances, wherein the Van Lint sliding flap was employed instead of the triangular flap recommended by Elliot. The Von Hippel trephine with stop is preferred to other instruments. The most recent operation for glaucoma, the "T" sclerotomy of Van Lint, is briefly described, but it is of too recent introduction to compare results. FRANCIS LANE.

**MacGillivray, A.: Subconjunctival Cataract Extraction. Edinb. M. J., 1914, xii, 411.**

By Surg., Gynec. & Obst.

The author has adopted a method of extraction similar to that described by several writers in the

past, and finds it of value in cases in which prolapse of the vitreous is likely to occur, those in which post-operative quiet is impossible, and those in which conditions of asepsis are not ideal. The usual corneal section is made, but the blade is turned just before cutting out, so as to form a conjunctival bridge at least ten mm. long. The lens is delivered under this, either with, or without, iridectomy.

E. B. FOWLER.

**Whiting, M. H.: The Extraction of Diabetic Cataract. Practitioner, Lond., 1914, xcii, 573.**

By Surg., Gynec. & Obst.

Whiting says that it is not widely appreciated that the same dangers exist in the performance of ophthalmic operations under local anesthetics, as those recognized in general surgery with general anesthetics. A diabetic case may be progressing favorably, but the disturbing mental effect of an ordinary cataract extraction may precipitate coma and a fatal termination. The best operation is simple extraction. Before operating the following points must be kept in view: (1) Glycosuria must be reduced to a minimum. (2) Acetone and diacetic acid must be absent from the urine. These two conditions are not always compatible; when such is the case the second should take the prior place.

FRANCIS LANE.

**Jenkins, G. J.: Case of Hæmatoma Auris; Operative Treatment. Proc. Roy. Soc. Med., 1914, vii, Otol. Sect., 55.**

By Surg., Gynec. & Obst.

An excision was made and the blood removed two and one-half hours after the injury. The blood, which was mostly fluid but with some clots in the lower part, was on the external surface only and extended somewhat into the meatus. The present condition seems to justify the procedure.

E. B. FOWLER.

**Bennett, F. W. and McKenzie, D.: Acute Purulent Otitis Media, with Signs of Acute Labyrinthitis; Recovery without Labyrinth Operation. Proc. Roy. Soc. Med., 1914, vii, Otol. Sect., 20.**

By Surg., Gynec. & Obst.

In this case, a cortical mastoid operation was performed on a woman, 29 years of age, five weeks after the onset of an influenzal otitis media, but fever, vertigo, and deafness continued. At a second operation, three weeks later, the middle fossa was opened but there was no evidence of fistula into the labyrinth and the wound was closed without opening it. The fever dropped and the patient eventually recovered.

E. B. FOWLER.



**Brown, E. V. L.: An Anatomic Study of a Case of Temporal Conus (Coloboma) in an Hyperopic Eye.** *Arch. Ophth.*, 1914, xliii, 254.

By Surg., Gynec. & Obst.

The essentials of the entire finding consist of a crescentic defect in the pigment epithelium and all the layers of the chorioidea along the temporal border of the disc in an eye of the hypermetropic type—23 mm. axial length. The chorioidea stops a considerable distance temporal to the disc. Almost the entire defect is bridged over and filled out by a fold or duplication of the retina. This is a direct continuation of the two nuclear layers of the retina. The nerve-fibers go over into the nerve-head in a normal way. The anterior layers of the sclera are absent over the floor of the conus, but the sclera is nowhere ectatic, either behind the conus or elsewhere.

In myopic conus the length of the eyeball is increased and the chorioidea torn away from the margin of the disc. The condition is therefore developmental and not congenital, as must be assumed in the case from the short axis. In the non-myopic eye the conus, or coloboma, is due to an overgrowth of the secondary optic vesicle at its junction with the optic nerve at a time when the mesoderm of the sclera and chorioidea has not yet been laid down. The retinal fold then effectively blocks the development of the chorioidea and sclera at the nerve, and the conus results.

In the only other case reported, that by Elschnig, the temporal conus (coloboma) was deeper, and involved the optic nerve sheaths.

**Lake, R.: Patient after Operation for Aural Vertigo.** *Proc. Roy. Soc. Med.*, 1914, vii, *Otol. Sect.*, 25.

By Surg., Gynec. & Obst.

The symptoms were of 7 years' standing in a man 61 years old. Movement appeared in the vertical plane and any attempt to move caused marked deviation to the right. The left ear was totally deaf. A complete vestibulotomy was done with relief from symptoms.

E. B. FOWLER.

**Tibbles, S. G.: Two Cases of Ocular Disease Associated with Pyorrhœa Alveolaris.** *Brit. M. J.*, I., 1914, i, 755.

By Surg., Gynec. & Obst.

The author reports a case of failing vision, of two months' progression, in an adult. Correction of a purulent disease around the teeth resulted in the clearing of the vitreous capacities, at first present, and the return of vision with marked improvement in general health.

In the second case an iridocyclitis cleared rapidly after aural treatment.

E. B. FOWLER.

**Holden, W. A.: A Fifth Case of Acute Disseminated Myelitis with Retrobulbar Inflammation of the Optic Nerves.** *Arch. Ophth.*, 1914, xliii, 231.

By Surg., Gynec. & Obst.

There was complete blindness of one eye and almost complete blindness of the other, with subse-

quent restoration of useful vision in each. There was a lateral hemianopia in the field of one eye only. The history of the case is given in detail. Wassermann blood reaction was negative. Strychnia was administered.

GUSTAVUS I. HOGUE.

**Milligan, W.: Cerebellar Abscess; Operation; Recovery.** *Proc. Roy. Soc. Med.*, 1914, vii, *Otol. Sect.*, 22.

By Surg., Gynec. & Obst.

The abscess complicated a chronic running ear; was diagnosed, opened, and drained and the patient recovered. In the discussion JENKINS brought out the fact that in some cases there was a more definite localization of the pain immediately after the lumbar puncture.

E. B. FOWLER.

**Parker, W. R.: Report of a Case of Dermoid Cyst of the Orbit, Producing Marked Exophthalmos, Relieved by the Krönlein Operation.** *J. Mich. St. M. Soc.*, 1914, xiii, 335.

By Surg., Gynec. & Obst.

Parker reports the case of a woman, aged 30, who had been troubled with unilateral progressive exophthalmos for six years. A cyst was removed from the orbit after a Krönlein resection of the outer wall. The cyst contained degenerated epithelium, old blood, dead hairs, and much cholesterol. It is rare to find this form of congenital tumor within the orbit.

E. B. FOWLER.

**Reinhold, C. H.: Sclerocorneal Trephining for Staphyloma.** *Indian M. Gaz.*, 1914, xlix, 181.

By Surg., Gynec. & Obst.

Reinhold is satisfied that a reduction of anterior staphyloma can be effected by sclerocorneal trephine. It is remarkable that from 17 unselected cases operated upon, a restoration of "quite normal" curvature resulted in 5, and "nearly normal" in 6 cases. The degree of staphyloma varied from medium to very large with a duration of from 2 months to 10 years. An improvement of vision was recorded in 5 cases. The best results are to be anticipated where clear cornea is present in the pupillary area, in recent cases in which the scar tissue is still yielding, and in conical cornea. The author recommends that the trephine be done almost wholly corneally and with iridectomy.

FRANCIS LANE.

**Wilder, W. H. and McCullough, C. P.: Sporotrichosis of the Eye.** *J. Am. M. Ass.*, 1914, lxii, 1156.

By Surg., Gynec. & Obst.

The authors report a case of conjunctival sporotrichosis in a student who had been working in the laboratory with cultures of various strains of sporotrich, and on several occasions small capillary pipets containing emulsion of the organism were broken at a distance of 8 or 10 inches from the face. One evening, he noticed a soreness of both eyes, together with photophobia. Later, the lids were slightly swollen, the pain was increased and the surrounding lymph-glands were quite tender on pressure. The pain, swelling of the eyelids, and photophobia in

creased. The conjunctiva of the eyelids of both eyes was reddened and so swollen that the fornix rolled out in a mass when the lower lids were everted. In addition there were present on the palpebral conjunctiva and also on the fornices several grayish yellow, slightly elevated spots varying in size from 0.5 to 3 mm. in diameter, from some of which the covering epithelium had been cast off so that they seemed like small ulcers. Numerous follicles appeared in other portions of the conjunctiva.

Seven days from the onset the general condition was worse; the patient had headache and *malaise*; the temperature was 101°; the leukocyte count was 18,000. The following day the temperature was 102°. During the night a sudden pain occurred in the left knee on the internal side of the upper end of the tibia; in the morning the limb was very sore and painful on pressure or motion. Two days later there was pain in the left elbow, wrist, and the lower end of the right femur, which was very sharp especially on pressure and motion.

The following day the pains were still persistent. The temperature was 101° in the afternoon; the conjunctiva was much improved; the ulcers had healed. In two months the lids were normal.

Cultures showed the colonies were typical of sporothrix, each being distinct, with a center rising in ridge formation like the peak of a mountain. Microscopically, there was an abundance of long filaments and round or oval spores; the latter were not only in the filaments but also free. The organisms were stained with the ordinary dyes and retained Gram stain. At the end of a week Gram-positive oval bodies were seen in smears of pus from the eye; these resembled sporothrix, but were found only singly or in pairs, no definite clumps being observed. Seventeen cases of sporothrix of the eye are reviewed.

Some of the clinical features of this infection are common to other conditions. Lymphadenopathy would be present with chancre of the conjunctiva, but in the initial lesion of syphilis it is very unusual to have such multiple erosions or ulcerations, and scrapings from such an ulcer would probably show the characteristic spirochætæ.

Tuberculosis of the conjunctiva would probably not be so rapid in its course, but it would be a week or more before the caseous tuberculous nodule would break down and form the ulcer, whereas in sporotrichosis the little ulcers develop in a few days.

Parinaud's conjunctivitis presents more points of similarity, and it is possible, as mentioned by Morax, that cases of sporotrichosis may have been mistaken for Parinaud's conjunctivitis.

In the latter, the vegetations on the conjunctiva are different from the follicles and the yellowish nodules of sporotrichosis. The adenopathy in Parinaud's conjunctivitis points to a severe infection, but all attempts to isolate an organism from the lesions have failed. Recently, however, Verhoef has observed in such conditions an organism like leptothrix. On the other hand, the diagnosis of sporotrichosis is easy if scrapings from the ulcers or

nodules are inoculated on appropriate mediums and left at from 18° to 20° C., for the organisms appear in from three to ten days.

**Grout, G. H.: A Case of Permanent Impairment of Vision following Gastro-Intestinal Hæmorrhage.** *Arch. Ophthalm.*, 1914, xliii, 234.

By Surg., Gynec. & Obst.

The author reviews the literature on the impairment of vision following excessive loss of blood. He believes in the Holden theory; i. e., that "the retinal ischæmia produces a degeneration of the ganglion cells." The man, 66 years of age, gave a negative history save for the hæmorrhage which lasted three days.

GUSTAVUS I. HOGUE.

## EAR

**Cunningham, F. M.: Chronic Suppuration of the Middle Ear.** *J. M. Ass. Ga.*, 1914, iv, 1.

By Surg., Gynec. & Obst.

It is the author's opinion that chronic suppuration of the middle ear is a more frequent condition than many think from clinical observation and that not a single case in which necrosed bone has been determined has ever been cured by irrigation.

It is strictly a surgical disease to be treated by thorough removal of every particle of diseased tissue, regardless of the area it occupies, in order to avoid the development of intracranial complications, as statistics show that one case in eighty-eight has some intracranial complication.

The author gives the history of twelve cases illustrating his theory that chronic suppuration is a surgical disease, curable if so treated before intracranial complications develop.

ELLEN J. PATTERSON.

**Milligan, W.: Malignant Disease of External Ear; with Extensive Invasion of Temporal Bone, Operation; Recovery.** *Proc. Roy. Soc. Med.*, 1914, vii, *Otol. Sect.*, 21.

By Surg., Gynec. & Obst.

An operation was performed on a woman fifty-four years old, in whom most of the right auricle was ulcerated away, and the glands at the angle of the jaw and in front of the sternomastoid had become involved. After ligation of the external carotid, the ulcerated area, the underlying bone, and the glands were removed. Scarlet red in olive oil and the Finsen light were used in the after-treatment and for a period of six months there has been no evidence of recurrence.

E. B. FOWLER.

**McKenzie, D.: Mastoiditis without Perforation of the Tympanic Membrane.** *Proc. Roy. Soc. Med.*, 1914, vii, *Otol. Sect.*, 19.

By Surg., Gynec. & Obst.

Following the removal of the tonsils and adenoids in a child of six years, there was slight pain when the ear was touched but no genuine earache; the membrane was normal in appearance and at no time was there any discharge from the meatus. On the third day the mastoid region became swollen and the



bone was opened at once. The mastoid cells were occupied by pus and granulations. Recovery was uneventful.

STUART-LOW brought out the fact, in the discussion, that these cases were usually influenzal and that they usually followed an affection of the throat.

E. B. FOWLER.

**Canesteo, C.: Parotid Fistulæ Following Mastoid Operations.** *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxiii, 148. By Surg., Gynec. & Obst.

The author reports a case of parotid fistula from the lower end of a mastoid incision, the fistula appearing immediately after the operation, which had been performed two years previous. The usual treatment of galvanocauterizations and injections of tincture of iodine proving unsuccessful, Beck's paste was used, and two injections permanently closed the fistula.

In reviewing the literature, the author was able to find only a single case of fistula of the parotid following immediately upon the operative intervention. There were four other cases in which the fistulæ appeared much later.

Concerning the cause of these early fistulæ, the author believes that they are due to an operative wound of the salivary gland, due to one of two conditions: (1) An anomalous conformation of the parotid that permitted part of the same to cover a considerable part of the external surface of the mastoid; (2) an abnormal location on the mastoid of a gland somewhat hyperplastic, on account of past acute or chronic inflammatory processes that took a latent course, in which case the fistula would have followed a lesion of the parotid due, not to the incision, but to the manipulations in detaching the periosteum, made more difficult by the new formation of very strong adhesions.

OTTO M. ROTT.

**Beck, O.: Fistula Symptom in Non-Suppurative Diseases of the Ear.** *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxiii, 153. By Surg., Gynec. & Obst.

The author reports two cases in which movements of the eyeball were obtainable by compression or aspiration of air in the external auditory canal, in both of which the drum membranes were normal. One case was that of a little girl with hereditary lues, and this case showed with compression a slow movement of both bulbi; the other case, a man with acquired syphilis, showed a fistula nystagmus with rotatory and horizontal components. In neither of these cases was any history of suppuration obtainable, and the condition of the ear-drums spoke against such a possibility.

As to the question of how it is possible in the absence of suppuration, with an intact ear-drum, and presumably intact ossicular chain, to produce bulbous movement through increase or decrease of the air pressure in the external auditory canal, three explanations are offered: (1) In the intensity of the air-pressure increase; (2) in the favorable or unfavorable circumstances through which this increase

of pressure can be transplanted into the labyrinth; (3) in the irritability of the labyrinth itself.

The first explanation is disregarded by the author because all cases were submitted to the same degree of pressure. The third explanation is likewise disregarded from Alexander's own experiments. The second explanation seems the most plausible. As to the question of where upon the lateral wall of the labyrinth the air compression or aspiration produces its effect, the author is of the opinion that an abnormal mobility of the stapes is, in all these cases of normal middle ear, the chief explanation of the phenomena, both of the slow movements of the eyes and the typical fistula nystagmus, since the anatomic conditions on the inner wall of the ear seem to speak against the possibility that any other place can be regarded as the point of attack for the irritation.

Both of the cases cited showed more pronounced subjective and objective symptoms by compression than by aspiration.

OTTO M. ROTT.

**Stein, O. J.: Syphilis of the Ear.** *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxiii, 116.

By Surg., Gynec. & Obst.

The subject is divided for convenience of discussion into lesions, as they affect respectively the external ear, middle ear, inner ear, and intracranial regions.

In the external ear, the chancre or ulcer durum is hard and infiltrated, usually single and umbilicated; spirochæta pallida may be found on the slide, and the neighboring lymph-glands are enlarged and sensitive. The usual location is about the external meatus. Lines of the drum occur as a papule or minute gumma.

The secondaries are in the form of condylomata at the posterior auricular attachment; but when found about the entrance of the meatus, they resemble granulations or polypi. The maculopapular eruption has been observed in the canal and on the drum.

The tertiaries are manifested by periostitis of the bony canal and by gumma.

In the middle ear, lues is considered a common cause of disease, but there is no description that will characterize a middle ear syphilis clinically. An endarteritis of the mucous membrane, and a periostitis of the bony walls, aside from gumma, constitute most of the pathology in this region. Lues of the tube in the primary form may be seen at the faucial end; as secondaries it appears as an erythema, or as pearl-like plaques.

In the inner ear the symptoms are like those of any other nerve deafness, with or without the vestibular symptoms. The deafness comes on quite suddenly; in fact, often over night or after some prolonged exposure or exertion. The pathology consists of a round-cell infiltration and hyperplasia of connective-tissue substance, especially of the periosteum. There may be a serious labyrinthitis following a severe hyperæmia and even

pus; new bone formation; chronic endarteritis and hæmorrhage into the fibers of the cochlear nerve, leading to atrophy, particularly in the basal coil and the cells of the spinal ganglion. Gumma may be found in the petrous bone. Periosteal thickening causing pressure in the internal auditory canal may result in paralysis of both the seventh and eighth nerves.

In the intracranial region the lesion may be in the cortex, in the mid-brain or the nuclei, in the cerebellar pontine angle and in the cerebellum. The pathology is meningitis, endarteritis, and gumma. In the diagnosis the points to be considered are a rapid onset; profound deafness, or at least of severe degree, slight or absence of tinnitus, associated protean manifestations of cerebrocerebellar characters, normal drum and open tubes, as strongly presumptive of intracranial lues. OTTO M. ROTT.

**Scott, S.: An Uncommon Form of Malignant Disease of Ear.** *Proc. Roy. Soc. Med.*, 1914, vii, *Otol. Sect.*, 22. By Surg. Gynec. & Obst.

The pathological findings, in an ulcerating growth, resembled a rodent ulcer, with large numbers of keratinized epithelial cell nests. Glandular metastases had occurred. E. B. FOWLER.

**Shambaugh, G. E.: The Semicircular Canals and the Function of Equilibrium.** *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxiii, 111.

By Surg., Gynec. & Obst.

The author's conception of the origin of the labyrinthine tonus impulses, through which the semicircular canals play their part in preserving the equilibrium of the body is that these impulses emanate from the hair-cells of the cristæ and that they are the result of a constant stimulation. The normal stimulation of the hair-cells of the cristæ is brought about by the impaction of endolymph currents against the cupola, resulting in an interaction between the cupola and the hairs of the hair-cells. This, the author believes, is kept up in the labyrinth by the pulsations associated with each beat of the heart, because with each pulsation there must be a

rise and fall of intralabyrinthine pressure, and with each increase and decrease of intralabyrinthine pressure there must result a slight to-and-fro motion of the endolymph which would be sufficient to keep up a constant stimulation of the hair-cells on both sides of each crista.

In order to understand the clinical phenomena resulting from unilateral disturbance of labyrinthine tonus—which are: (1) An increase in tonus from the affected labyrinth produces nystagmus toward the same side; (2) a complete suppression of tonus in the affected labyrinth results in a nystagmus toward the opposite side, and (3) an intracranial irritation produces nystagmus again toward the affected side—the following facts regarding the physiology of these canals must be kept in mind:

1. The impulses from each canal stimulate only those muscles the movements of which lie in the plane of this canal.

2. A motion of endolymph in one direction in a canal stimulates only those hair-cells on the side of the crista receiving the impact. In order to stimulate the hair-cells on the opposite side of the crista, an endolymph current in the opposite direction is necessary.

3. An endolymph current in one direction in the canal stimulates the muscles which produce movement toward one side; an endolymph current in the opposite direction stimulates the muscles which produce motion in the opposite direction.

4. A greater stimulation results from an endolymph current in one direction in a semicircular canal than in the opposite.

5. In all three of the semicircular canals the greater response is obtained from those endolymph currents which stimulate the muscles producing nystagmus toward the same side.

From the above it is evident that impulses emanate from each canal producing nystagmus in either direction, the stronger always being those which produce nystagmus toward the same side. These facts explain the symptomatology of nystagmus to the side of that labyrinth which has become affected by inflammatory processes. OTTO M. ROTT.



# SURGERY OF THE NOSE, THROAT, AND MOUTH

## NOSE

**Alexander, L. D.: Adenocarcinoma of the Nose; Chronologic Review and Case Report.** *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxiii, 97.  
By Surg., Gynec. & Obst.

A study of the 21 cases in the literature shows that adenocarcinoma, which the author defines as an adenoma which has undergone carcinomatous development, sections of which show a pernicious proliferation of the glandular cells, showing areas of confusion in their arrangement and resulting in penetration of the basement membrane, is essentially a disease of the cancerous age, though an early onset is possible, as is evident from two of the cases in which the ages of the patients were 22 and 23 years respectively. The influence of sex is negative, as is the side involved.

The predilection for the middle turbinal and ethmoid region, as evidenced in 13 cases, is significant in view of the imperfect surgery performed in that region.

Absence of pain, even when extensive involvement of adjoining structures has occurred, is a noticeable fact. The absence of lymphatic involvement is more apparent than real.

In the opinions of the authorities quoted, the outlook is most hopeless, but the author believes that better results will be accomplished by the routine examination of polypoid growths, leading to the early recognition of those showing beginning malignant changes, and the discovering of coexisting pedicled malignant growths. OTTO M. ROTT.

**Kahn, H.: A Short Study in the Etiology of Nasal Hydrorrhœa, with Case Reports.** *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxiii, 184.  
By Surg., Gynec. & Obst.

There are two types of nasal hydrorrhœa: (1) The cerebrospinal type, in which there is a definite anatomic loss of continuity in the skull, and a hiatus is formed through which the fluid pours into the nasal cavity; (2) the pure nasal type, which may vary from the paroxysmal rhinitis to the almost painless, non-irritated variety, with only an abnormal watery discharge from the mucous lining of the nose.

It is the latter type which the author discusses and which he believes is a disturbance of the sympathetic nerve fibers in the nasal mucosa, caused by some irritant or by nervous shock similar to a tortured animal, giving rise to a change in the function of the fibers and causing vasodilatation and extravasation of a watery fluid.

Two cases are reported in support of this view. In the first, the girl was tormented by her work and

the realization of her immense responsibility; in the second case, the rhinorrhœa followed in a short time after the death of a parent, throwing on an erstwhile carefree girl the support and responsibility of a family. OTTO M. ROTT.

**Sobotky, I.: A Note on Nasal Synechiæ.** *Am. J. Surg.*, 1914, xxviii, 180. By Surg., Gynec. & Obst.

The author considers synechia usually the result of operations or ulcerative processes in the nose, to be treated only when they give rise to symptoms, as the permanent cure is one of most difficult problems confronting rhinologists.

After the removal of fibrous synechiæ by operation or electric current, re-forming of the band must be prevented by the use of some mechanical device like mica scales, celluloid, or hard rubber plates, and the patient must be seen frequently until complete healing has occurred. ELLEN J. PATTERSON.

**Wylie, C. B.: Physiologic and Pathologic Relations of the Eye and Accessory Sinuses of the Nose.** *Laryngoscope*, 1914, xxiv, 496.  
By Surg., Gynec. & Obst.

In the chronic non-suppurative form of sinusitis, the ocular manifestations will be more obscure and uncertain than in the suppurative variety.

Opinions differ somewhat as to which sinuses are most frequently involved in producing these obscure eye symptoms; but the consensus of opinion is that the ethmoidal, sphenoidal, and maxillary sinuses, in the order named, are most frequently involved.

The orbit is from one-half to two-thirds surrounded by bony cavities which are in direct communication with the nose, consequently pathological changes of these cavities may profoundly affect the ocular structures.

The immediate and pronounced favorable results obtained from surgical treatment of the accessory cavities should be proof of the relationship existing between the nose and the eyes.

ELLEN J. PATTERSON.

**Lubman, M.: Improved Method of Removing the Posterior Tip of the Inferior Turbinate.** *Laryngoscope*, 1914, xxiv, 394. By Surg., Gynec. & Obst.

With a colored thread tied by means of a sailor's knot to the center of the wire loop of the snare, the author passes the snare along the floor of the nose slightly further than the tip of the inferior turbinate, keeping the thread directed to the septal side. By pulling the thread with the left hand the wire loop will bend at right angles to the tip and encircle the hypertrophied mass. ELLEN J. PATTERSON.

## THROAT

**Henke, F.:** *New Experiments as to the Physiological Significance of the Tonsils* (Neue experimentelle Feststellungen über die physiologische Bedeutung der Tonsillen). *Arch. f. Laryngol. u. Rhinol.*, 1914, xxviii, 231.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

To study the relation between the lymphatic system of the nasal cavity and the tonsils, Lenart injected water and tissue fluids containing insoluble materials into the nasal mucous membrane of living animals, and he could demonstrate the granules in the tonsils 24 hours after the injection. In order to get an exact answer to the question of the relation between the lymphatic system of the nose and the tonsils, Henke went over Lenart's experiments and came to the same conclusions. Then he undertook similar experiments on patients. He injected very small quantities of sterilized fluid containing soot into the nasal mucous membrane. After periods of from six hours to six days the tonsils were removed, and as a rule black particles of soot could be demonstrated, their distribution in the microscopical specimen showing that they must have reached the tonsils through the lymph-vessels. If the tonsils were removed a few days later the soot particles could no longer be found; they had been brought to the surface of the tonsils by the lymph-stream and excreted. After the injection of the fluid containing soot into the gums the soot particles could also be found in the tonsils, showing that there are lymphatics connecting the gums and tonsils. In order to prove beyond a doubt that the soot particles are transported by the lymphatics and not by the blood, the same experiments were performed on the cadaver, with the same results.

These experiments show that the function of the tonsils is similar to that of the ordinary lymph-glands. They serve to form new white blood-cells and act as a filter for the lymph that flows through them; there is one important difference in the function, however. The organism sends foreign substances through the lymph-vessels to the free surface of the tonsil projecting into the pharynx in order to get rid of them in this way. This free surface is greatly increased in extent by the crypts. The tonsil therefore under normal conditions is a protecting organ, but when it is diseased so that external excretion is interfered with it becomes a reservoir for harmful toxins and must be radically removed as a source of danger.

KAHLER.

**Hudson-Makuen, G.:** *Surgery of Faucial Tonsil, as It Relates to the Functions of the Tongue and Soft Palate in the Production of Voice*. *Laryngoscope*, 1914, xxiv, 508.

By Surg., Gynec. & Obst.

The author urges greater conservatism in tonsillar surgery, basing his arguments upon a thorough study of the mechanical functions of the tonsil in phonation, articulation, and deglutition.

The systemic functions of the tonsil may never be

known because of the difficulties which arise in making the necessary investigations; but the functions of the tonsil in phonation and articulation have been determined by a study of its anatomical relationship to the tongue, soft palate, and larynx.

The tonsillar surgery of childhood should be as conservative as possible, because then if ever the tonsils are exercising their systemic functional activities, and the tonsillar surgery of adult life should be conservative because of the mechanical functions of the tonsil in artistic vocalization.

ELLEN J. PATTERSON.

**Beck, J. C.:** *Cancer of the Larynx, with Special Reference to Radium Therapy*. *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxiii, 166.

By Surg., Gynec. & Obst.

The author states that he has seen no permanent cure of laryngeal cancer by radium therapy, but he draws the following conclusions from the four cases which he has thus treated and now reports:

1. None of these cases of carcinoma of the larynx ran the course that similar cases do without radium therapy.
2. Distinct destructive changes, even microscopically proved, of the cancer were observed.
3. Pain was practically absent.
4. The action of the radium differed in some of the cases, as in two the growths disappeared at least for a time, while in two they did not; in fact, the cancer grew.
5. The effect of the radium on the salivary apparatus was very distinct.
6. General symptoms similar to the cachexia, but still differing in some ways, could be seen whenever the radium was used for any prolonged period.
7. From the positive results obtained by the writer in some of the superficial carcinomata of the nose, mouth, and palate, and from the good results of others who treat superficial cancers, it is the belief of the writer that much larger doses of radium element employed in the treatment of carcinoma of the larynx would possibly cure such conditions, especially if employed early. The author has been employing 10 mg. radium element.

OTTO M. ROTT.

**Johnston, R. H.:** *Straight Direct Laryngoscopy, Bronchoscopy, and Œsophagoscopy*. *Am. J. Surg.*, 1914, xxviii, 182.

By Surg., Gynec. & Obst.

The writer cites cases showing the value of direct methods with the head straight and believes these methods are worth learning, however expert the observer may be with the mirror. This applies especially to children where the use of the mirror is attended with great difficulty and lives may be saved by the use of the direct laryngoscope by making an early diagnosis of œdema or subglottic swelling and the early institution of treatment. This method is also of use in the diagnosis and treatment of chronic laryngitis in adults, œdematous laryngitis, and perichondritis, though these



latter may also be successfully cared for by the indirect method.

With the direct laryngoscope a differential diagnosis of simple acute, oedematous, subglottic, and membranous laryngitis can be made. Membrane in the last case is easily recognized and prompt administration of antitoxin would probably do away with the necessity for intubation. In removing a tuberculous epiglottis it is much easier to see what is being done by the direct method, and hæmorrhage is much more easily controlled by direct pressure. This also applies to tuberculosis of the rest of the larynx and there should be no hesitancy about removing through the tube as much of the diseased tissue as may be necessary. The cautery may also be applied with ease through the tube. Singers' nodules are best treated by removal through the direct laryngoscope with the head straight and by using a small tube. This is easily accomplished without injury to the cords, and if skillfully done the voice rest cure is never necessary.

Laryngeal papillomata in children can almost always be diagnosed with ease and cured by removal and treatment with the high-frequency spark through the tube. The author uses a spark of about one-fourth inch and the tumors melt away rapidly. Many successful cases are cited. In the treatment of stenosis of the larynx, direct laryngoscopy occupies the first place. An exact diagnosis can be made and the cicatrized tissue cut through more safely than can be done by any other method. The stenosis can be cut through directly and a Rogers' tube inserted after the proper dilatation. Several cases of foreign bodies in the larynx and one case of pemphigus are reported. He emphasizes the value of having the head in the straight position in direct laryngoscopy and believes it is an absolutely safe method under normal conditions. Even with contra-indications, such as arteriosclerosis, the use of a small tube and the straight position of the head make the method practically safe. It is almost as quickly used as the mirror when the operator becomes expert. In almost every case in adults local anæsthesia is used. Alypin or novocaine are the anæsthetics of choice, except in children, where no anæsthetic at all is employed.

GEORGE M. COATES.

## MOUTH

**Brown, G. V. I.: The Surgical Treatment of Post-Operative Palate Defects.** *J. Am. M. Ass.*, 1914, lxii, 1539.

By Surg., Gynec. & Obst.

Immediate reoperation when the sutures of a previous cleft-palate operation fail to hold and when sloughing of the parts is actively destroying tissue at the line of apposition is not an advisable procedure. Such benefit as may have been secured in this way has probably not resulted from an improved local resistance due to leucocytosis as reported but for the reason that separation of the

mucoperiosteal tissue was more efficiently accomplished at the second than at the first attempt. Thus tension was more effectually overcome and the result consequently better.

A period of from nine months to one year should elapse before the same kind of operation should again be done, because it takes that long a time to reestablish circulation in these tissues sufficiently to give them a dependable resistance.

In undertaking the surgical closure of palatal defects the question invariably arises, Shall tissue to cover the opening be secured by dissecting free a sufficient area from one side and turning it over so that the structures are reversed with an attached pedicle on the inner border of that side and suturing the free edge to the freshened border upon the opposite side in accordance with the principles governing the Davies Colley and other similar operations in the performance of uranostaphylorrhaphy, or shall mucoperiosteal flaps be raised and brought together by taking advantage of the arch of the palate, supplemented by liberating incisions upon each side to aid in effecting coaptation along the central line after the methods of Von Langenbeck as modified at the present time.

Every effort should be made to gain the desired results without disturbing the natural relation of the mucoperiosteum to the bony portion of the palate, whether the opening be large or small. The parts should be kept in such form that subsequent granulation of the wound surfaces will tend to fill in any opening that might still exist, and if it does not fill in completely by granulation the result upon the surrounding structures will be favorable rather than unfavorable to successful closure at a later operation, should one be necessary. The loss of a flap so raised and reversed as to leave a corresponding surface of bone denuded might render further surgical operative measures practically useless, because this portion of the palate would not be completely restored and any such bare surface would at best only be covered by a thin layer of tissue that would not be dependable or serviceable for flap purposes.

The contraction of scar tissue in these cases usually gives a shape more or less like a funnel to the hole in the palate, with the slope more marked in a direction from above downward toward the outer surface. If a complete paring of the tissue at the inner border of the palate opening is made entirely through from the palatal to the nasal surface, much valuable tissue will be lost unnecessarily. If raw surfaces are secured by splitting the tissue without paring the borders, there is too much of a tendency to resumption of the original form of the tissue borders during the healing process and this is not favorable to union along the line of coaptation. In these cases tension should be overcome by freeing the mucoperiosteal flaps from the bone surfaces, as for uranoplasty according to the modified Von Langenbeck method. Cicatricial tissue should be severed by a thin-bladed knife at just the right angle to



pass between the soft tissue and the bone without injuring the former.

The denudation of the tissue border surrounding the opening is best performed by following the slant of the opening sufficiently to give a broad raw surface up to the point at which the constriction is most evident. Splitting from this point all around will then give an added thickness without undue loss of tissue.

The inequalities due to wrong coaptation particularly in the region of the soft palate must be overcome. When the borders are loosened from the bone surfaces and ready to promote coaptation of the flaps in the central line without tension, this must be done in such form as to give the nearest possible approximation to normal lines. Not infrequently, when several unsuccessful operations have been previously performed, all that can possibly be accomplished is readjustment of the parts which will make complete closure later on more easily secured. When this is accomplished, any defect which may still remain is readily closed, but if it be overlooked the result may leave the palate in a worse condition instead of better. When there is almost total absence of tissue on one side due to extensive sloughing or ill-advised destruction at the previous operation with the tissue full upon the opposite side, it is sometimes necessary to bring about the transposition of good tissue from one side to the other, so that at the final operation there may be at least a reasonable measure of tissue upon both sides from which to construct flaps. This may be done by making a complete closure of the opening and carrying the flap from the good side to the poorer one in such a way that tension will be so distributed as to cause the opening to occur midway between the two points. In a number of instances the author has closed, perfectly, palate fissures that seemed to be utterly hopeless, because there was practically no visible tissue left upon a sufficient portion of one side of the bony palate.

**Bloodgood, J. C.: Cancer of the Tongue, Based upon the Study of Over One Hundred Cases.**  
*Maryland M. J.*, 1914, lxii, 105.

By Surg., Gynec. & Obst.

It has been demonstrated by the author that failure to cure fully developed cancer of the tongue is due chiefly to the neglect of removal of the muscles of the floor of the mouth below the cancer, and that the high mortality after operations for cancer of the tongue is due chiefly to the removal of the floor of the mouth without removing a section of the lower jaw. If operation with the electric cautery is done within a few weeks after the onset, preserving the center of the lesion for microscopic study, the probabilities of cure are almost 100 per cent. Previous operations have been too extensive both upon the tongue and glands of the neck.

Cancer of the tongue infiltrates into the glands of the neck through the floor of the mouth, and lack of involvement of the glands does not preclude infiltra-

tion of the floor of the mouth. It is impossible to close the opening in the mouth after removal of the tongue, floor of the mouth, and the glands, unless the jaw be resected. If done without resection, the mortality is almost 80 per cent,—from pneumonia or late infection of an oral fistula.

In November, 1910, in a case of early lingual cancer, the author, for the first time, removed the right half of the tongue, the right floor of the mouth, the right half of the lower jaw, and the glands of the right side of the neck, in one piece. The wound was closed by suturing the mucous membrane of the right cheek to the remaining half of the tongue. The patient swallowed at once after the operation and no recurrence followed. As the removal or resection of the lower jaw is mutilating, the author has attempted to produce the same results another way.

In a subsequent case the glands were first removed, their connection with the floor of the mouth below the lesion was thoroughly burned with a cautery, and the wound was closed. Then the lesion in the tongue or floor of the mouth was attached with the cautery, the application usually being repeated two or three times until everything was destroyed down to the area first cauterized from below. The healed skin-flap of the first operation forms the floor of the mouth and prevents an oral fistula.

The majority of cases seek surgical aid at an unnecessarily late period. In early cases there is always something to be seen and felt in the tongue or floor of the mouth; if attached at once, a local operation with the cautery should suffice; in a little later stage removal of the glands and repeated cauterization of the mouth; in still later stages resection of the jaw must be done. The author advises that this should be done in three stages: First, thorough removal of the glands with cauterization of the floor of the mouth from the neck wound; second, cauterization of the lesion within the mouth; third, removal of the jaw and cauterized area.

A study of cases up until 1908, a period of 18 years, compared with those observed during the past five years, shows the influence of education. The very early pre-cancerous lesions have increased from eight to thirty per cent. The late and inoperable cases have decreased from eighteen to ten per cent. The cures have increased from twenty-one to fifty per cent.

The author, considering cases operated upon by himself,—14 in all,—reports no post-operative mortality, and so far but one patient has died from recurrence.

In Bloodgood's opinion, the technique has been conquered, and if the patients can be educated to come early the disease will probably be conquered.

H. A. POTTS.

**Murphy, J. B.: Carcinoma of Tongue at Age of Thirty-One.** *Surg. Clin. J. B. Murphy*, 1913, ii, No. 5.  
By Surg., Gynec. & Obst.

Some 5 or 6 years previous the patient had had soreness on the side of the tongue, but a physician



told him it was nothing serious. A year later there was a discoloration on the right side. The organ remained a little sore, tender, and discolored until some months later, when acid was applied. A slough formed and the lesion gradually increased. Later he had consulted a "physical culture exponent," who pronounced it tuberculosis, and he had been taking treatment ever since. About three weeks previous to admission there had been noted a swelling under the mandible. A similar mass had appeared several months before but had disappeared. For a year preceding admission the lesion had been abraded like an ulcer, discharging a little pus and occasionally caseous particles. Some four months before admission the patient began having constant dull pain around and in the right ear.

Upon examination, the right side of the tongue was found to be hard and woody as far as could be felt, including the whole base. A sinus was found leading down to a tooth and discharging pus slightly. There was an enlarged node under the mandible. A piece was removed and many slides all showed squamous-celled carcinoma. The patient was ad-

vised to have radium treatment and X-ray exposures. The case was then inoperable and practically hopeless.

**Murphy, J. B.: Tuberculoma of the Tongue.**

*Surg. Clin. J. B. Murphy, 1913, ii, No. 5.*

By. Surg., Gynec. & Obst.

The patient was a woman of 21 who had first noticed a mass on her tongue about 6 weeks previous; on admission it was the size of an almond, near the midline and about 1.5 inches from the tip. The mass was hard and indurated, had never ulcerated or bled, and had no enlarged nodes. She had no continuous pain, but experienced discomfort in talking and eating, and hard substances made the tumor extremely painful. The family history was negative for tuberculosis and carcinoma; Wassermann and tuberculin tests were negative. Notwithstanding the fact that the process was active the tuberculin test was negative. The gross appearance was that of sarcoma, and a piece removed proved to be tuberculoma, and injections of tuberculin were ordered.

# ABSTRACTS OF SOCIETY PAPERS

## ANNUAL CONGRESS LARYNGOLOGICAL ASSN.

MEETING HELD AT ATLANTIC CITY, MAY 25-27, 1914.

**Hopkins, F. E.: Report of a Case of Septic Infection of Parotid Glands.** *Tr. Am. Laryngol. Ass., Atlantic City, 1914, May.* By Surg., Gynec. & Obst.

Each intralobular duct is a branch of a subdivision of the main duct, so that if a septic infection results in closure of these ducts, drainage is impossible and dissection of the gland becomes necessary. Many important vessels and nerves traverse the gland. Before resorting to dissection Steno's duct should be probed.

OTTO M. ROTT.

**Halstead, T. H.: Endonasal Operation in Tumor of the Hypophysis; Report of a Case in a Female Nine Years of Age.** *Tr. Am. Laryngol. Ass., Atlantic City, 1914, May.*

By Surg., Gynec. & Obst.

The operation was performed in three stages:

1. Preliminary operation, March 13, 1914, upright position with cocaine and adrenalin. Removal of both middle turbinates and exenteration of right anterior and posterior ethmoid cells.
2. Second operation, local anæsthesia, submucous resection of entire septum; anterior wall of both sphenoids and the sphenoidal septum removed.
3. Nineteen days later the third operation: long sella removed, dura incised, following which there was an immediate gush of more than one-half an ounce of yellowish fluid.

COFFIN, of New York, takes out the posterior part of the septum, instead of doing submucous resection. He takes out the rostrum and gets to the sphenoid in that way. He does the operation in two or three stages.

OTTO M. ROTT.

**Delavan, D. B.: The Employment of Skiagraphy in the Diagnosis of Enlargement of the Thymus Gland.** *Tr. Am. Laryngol. Ass., Atlantic City, 1914, May.* By Surg., Gynec. & Obst.

Because of the importance of thymus enlargement when considering the operative risk, the author speaks of the importance of skiagraphy in its recognition.

COAKLEY, of New York, spoke of a case of malignant disease of the thymus, simulating clinically a goiter, which was diagnosed by the röntgenograph fairly well.

SHURLY, of Detroit, spoke of the interrelationship between the tonsils and adenoids, and thyroid and thymus, and because of this fact, of the constant danger the operator is in when operating on tonsils and adenoids.

HUBBARD, of Toledo, spoke of an enlarged thy-

mus producing asthma in children and of the permanent atrophy of the gland after seven treatments with the X-ray.

SWAIN, of New Haven, spoke of a case of thymic asthma in which thymic reduction was obtained by the use of adrenalin ointment, three to four times daily.

RANDALL, of Philadelphia, referred to a death in a patient 22 years old, twenty hours after a tonsil operation.

OTTO M. ROTT.

**Ingersoll, J. M.: Primary Sarcoma of the Trachea.** *Tr. Am. Laryngol. Ass., Atlantic City, 1914, May.* By Surg., Gynec. & Obst.

In this case a man aged 32 had a persistent troublesome cough for several months and three very severe prolonged attacks of paroxysmal coughing, and in each attack the patient finally coughed up and expectorated what he called a "polyp." Examination of the larynx showed it to be inflamed and on the left side of the trachea just below the first ring there was a pedunculated tumor. Operation was refused by the patient until later when the growth had extended and was inoperable.

DELAVAN, of New York, spoke of the hopelessness of the condition and voiced his belief that the hope of the future rested on some chemical treatment rather than on surgery.

JACKSON, of Pittsburgh, spoke of the rarity of primary malignancy in the trachea, and the hopelessness of the condition when it occurs on the posterior wall, because of the abundance of lymphatics in this region.

OTTO M. ROTT.

**Jackson, C.: Limitations of Bronchoscopy.** *Tr. Am. Laryngol. Ass., Atlantic City, 1914, May.* By Surg., Gynec. & Obst.

The author believes that the limitations of bronchoscopy are reached in the inability to find a small foreign body far down and far out at the periphery of the lung rather than in a failure to remove it when found. The limitations in a particular case could not be said to have been reached until bronchoscopy had failed at the hands of at least two bronchoscopists of experience.

HUBBARD, of Toledo, referred to the non-support of the patient and his physician as establishing a limitation.

INGALS, of Chicago, thinks that the time for working on a patient should not exceed a half-hour.

OTTO M. ROTT.



**Coakley, C. G.:** *The Surgical Treatment of Empyema of the Nasal Accessory Sinuses in Children under Fourteen Years of Age.* *Tr. Am. Laryngol. Ass., Atlantic City, 1914, May.*  
By Surg., Gynec. & Obst.

Cases requiring surgical treatment have either a swelling over the antrum or around the orbit.

The antral cases are almost always associated with an osteomyelitis of the superior maxilla and are operated through the canine fossa with a counter opening in the nose.

The orbital cases, if mild, are kept in bed with cold compresses and frequent instillation of a 1 per cent solution of cocaine and a 1/20,000 solution of adrenalin. The severer type requires operation without waiting for the development of a roentgenogram, and is an ethmoid and sphenoid enteration through the external route. A probe is passed into the frontal sinus and the diseased membrane must be removed lest there be recurrence; the wound should be left open. There is no consequent deformity.

MOSHER, of Boston, spoke of the development and size of the accessory sinuses in children and stated that from the third year there is an antrum large enough to permit of surgical treatment. The same is true of the ethmoid labyrinth from six years onward and of the frontal from the eighth year. From the third year a surgical sphenoid may be expected.

MAYER, of New York, spoke of another class of cases between the two types as mentioned by Coakley and all were in the neighborhood of three to five years of age. They presented the following conditions: An opening or perforation directly under the eye about 1/2 inch, an ectropion, and foul smelling discharge. A probe dropped into the opening over the zygoma went into a cavity and turned toward the nose and was easily pushed into the nose.

CASSELBERRY, of Chicago, spoke of a chronic type of case occurring in children from nine to fourteen years of age in which there were nasal polypi in the middle meatus, polypoid enlargement of the middle turbinate, and pus in the antrum and anterior ethmoid cells and sometimes in the posterior ethmoid cells. In these cases he removes the middle turbinate and the floor of the anterior ethmoid cells.

OTTO M. ROTT.

**Coffin, L. A.:** *The General Considerations of Empyema of the Nasal Accessory Sinuses in Children under Fourteen Years of Age.* *Tr. Am. Laryngol. Ass., Atlantic City, 1914, May.*  
By Surg., Gynec. & Obst.

In acute conditions where a sinusitis is suspected there is a copious discharge which may be washed out or otherwise cleared of secretion; if then negative pressure is applied to the nostrils and more pus or mucus found, we may be quite sure that it comes from some of the accessory sinuses. The author has found great satisfaction in treatment by negative pressure suction and the use of autogenous vaccines.

OTTO M. ROTT.

**Wood, G. B.:** *The Pathology of Acute Sinusitis of Children under Fourteen Years of Age.* *Tr. Am. Laryngol. Ass., Atlantic City, 1914, May.*  
By Surg., Gynec. & Obst.

The pathology of acute sinusitis is influenced by the severity of the infection and by the resistance of the patient, and upon these two factors depend the degree of inflammation. The characteristic changes found in the mucosa in the mild cases are: Congestion and slight oedema of the connective tissue, increase in the number of beaker-cells in the epithelium, and slight increase in the number of lymph-cells in the superficial layers of the connective tissue. In the more severe cases the oedema is increased, the congestion more severe, and the extravasation of the red blood cells into the connective-tissue stroma becomes so intense that the condition resembles a subepithelial hæmorrhage. The leucocytic infiltration is marked but still only involves the subepithelial layers of the connective tissue. In only the very severe cases does the whole connective-tissue layer become infiltrated so that the periosteum is attacked. Infiltration of the periosteum is very apt to be followed by bone changes. In diphtheria, sinus involvement is very frequent, though the majority belong to the mild catarrhal group. In scarlet fever sinusitis is less frequent but more severe, so that bone involvement is quite common. Other infectious diseases show nothing peculiar or characteristic. OTTO M. ROTT.

**Ingals, E. F.:** *Nasopharyngeal Myxosarcoma—Several Operations and Finally Spontaneous Recovery, under Observation for Twenty-seven Years.* *Tr. Am. Laryngol. Ass., Atlantic City, 1914, May.*  
By Surg., Gynec. & Obst.

The author reported a case first seen in 1883, when the patient was thirteen years of age. At that time a growth filled the nasopharynx and right nares. With difficulty the mass was removed at several sittings, but it continued to grow, causing great deformity of the right cheek and destroying vision of the right eye. Three or four years afterward it atrophied and fourteen years later there was no remnant of tumor left, but the deformity and loss of vision remained. The author refers to the well-known tendency exhibited by fibrous growths in this locality, of retrogression and final disappearance between the nineteenth and twenty-third years of the patient's life.

OTTO M. ROTT.

**Loeb, H. W.:** *The Influence of the Nose on Eye Affections, as Evidenced by a Case of Bilateral Blindness and One of Unilateral Scintillating Scotoma, Cured by Operations on the Ethmoid Cells.* *Tr. Am. Laryngol. Ass., Atlantic City, 1914, May.*  
By Surg., Gynec. & Obst.

The author reports two cases illustrating the title of his paper and states that these confirm his investigations on the anatomy of this region, to the effect that under ordinary circumstances the optic nerve is in close relation with the ethmoid labyrinth only at the postero-external angle of the



last posterior cell. Where this relation exists, there is only the slightest possibility of any danger to the optic nerve in suppuration confined to the ethmoid cells. But when the last posterior ethmoid cell replaces the sphenoid, the optic nerve runs close to and along the external wall of this ethmoid cell, and the vulnerability of the nerve is correspondingly heightened in view of the greatly increased portion exposed.

OTTO M. ROTT.

**Shurly, B. R.: The Relation of the Tonsil to Thyroid Disease.** *Tr. Am. Laryngol. Ass.*, Atlantic City, 1914, May. By Surg., Gynec. & Obst.

It is obvious that the physiology of the thyroid and other ductless glands is profoundly affected by toxic disturbances in general, and particularly those that enter by the lymphoid ring. The author has noted beneficial results after a tonsillectomy in patients who had incipient Graves' disease, thus adding another definite indication to surgical procedure. In all cases of thyroidism an examination of the nose, throat, and ears is essential.

SLUDER, of St. Louis, spoke of the shrinkage of a goiter following treatment of the lingual tonsil by means of application of silver, and salicylic acid in alcohol in saturated solution.

WOOD, of Philadelphia, reported the case of a nurse who had recurring tonsillitis, and exophthalmic goiter and hyperthyroidism following tonsillitis. The removal of her tonsils stopped the attacks and her goiter began to go down and the exophthalmos disappeared.

SHAMBAUGH, of Chicago, spoke of this relation existing even when tonsils were apparently in a healthy condition, but which after removal showed a pus pocket at the base.

OTTO M. ROTT.

**Mayer, E.: Primary Lupus of the Larynx.** *Tr. Am. Laryngol. Ass.*, Atlantic City, 1914, May. By Surg., Gynec. & Obst.

The author reported 2 cases of primary lupus of the larynx, in the later stage of the disease. This brings the total number of cases of primary lupus of the larynx recorded in the literature to 35. Lupus of the larynx is a chronic disease with but the slightest symptoms, is often accidentally discovered, and the prognosis to life is relatively good.

CLARK, of Boston, reported a case of lupus of the larynx in a young woman who previously had developed lupus at the angle of the mouth, on the cheek, and on the left side of the posterior wall of the pharynx. On examining the larynx the doctor found the epiglottis swollen, pale, and nodular, and the same condition extended down to the aryepiglottic fold and enlargement of the arytenoids.

CASSELBERRY, of Chicago, said that he believed he would have called the first case reported by Mayer one of tuberculosis of the larynx.

BIRKETT, of Montreal, spoke of 2 cases treated

by the X-ray by means of a lead tube dropped into the pharynx and down to the larynx. Both cases recovered. He also referred to two cases of primary lupus of the nose which made complete recoveries under radium.

OTTO M. ROTT.

**Shambaugh, G. E.: Laryngocele Ventricularis.** *Tr. Am. Laryngol. Ass.*, Atlantic City, 1914, May. By Surg., Gynec. & Obst.

Laryngocele ventricularis applies to a cystic dilatation of the ventricle of Morgagni, a pathological condition which results from forcible distention with air of the ventricle, usually as the result of coughing spells or the use of wind instruments. Cases occur where there is only an intralaryngeal distention, others with only an extralaryngeal distention, where the cyst has broken through the thyrohyoid membrane, producing a swelling in the neck, and other cases where there exists both an intra- and extralaryngeal distention. The author's case was an intralaryngeal swelling which became infected. An external operation was performed, and the cyst in the neck removed down to the opening of the thyrohyoid membrane. The intralaryngeal condition was operated upon by slitting the cyst from below upwards.

INGALS, of Chicago, had a case without infection, which he treated by aspirating the cyst and then injecting equal parts of 95 per cent carbolic acid and glycerine. There was a good result at the time, but the cyst reappeared later.

OTTO M. ROTT.

**Hopkins, F. E.: The Use of Radium in Papilloma of the Larynx in Adults.** *Tr. Am. Laryngol. Ass.*, Atlantic City, 1914, May. By Surg., Gynec. & Obst.

Some positive cures are reported. More than a single application may be necessary and burns from too long exposure with consequent adhesions and contractions are possible. Caution is advised as to the length of exposure when a powerful tube is used.

SWAIN, of New Haven, spoke of the aid of suspension laryngoscopy in this connection.

OTTO M. ROTT.

**Casselberry, W. E.: Recurrent Lymphomata of the Laryngopharynx; Presence of Streptococcus Hæmolyticus in the Growths Excised and in an Associated Spheno-Ethmoidal Discharge; Autogenous Vaccination; Arrest of Recurrence; Recovery.** *Tr. Am. Laryngol. Ass.*, Atlantic City, 1914, May. By Surg., Gynec. & Obst.

The author spoke of the causal relationship between the discharge from nasal sinus disease and tonsillar and other lymphoid enlargements, and reported a case exhibiting this association. The term lymphoma is used synonymously with infectious lymphoid swelling.

OTTO M. ROTT.



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## GENERAL SURGERY

### SURGICAL TECHNIQUE

NOTE.—The bold face figures in brackets at the right of a reference indicate the page of this issue on which an abstract of the article referred to may be found.

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# INTERNATIONAL ABSTRACT OF SURGERY

OCTOBER, 1914

## MONTHLY COLLECTIVE REVIEW

### THE ABDERHALDEN (SERODIAGNOSIS) TEST FOR PREGNANCY

#### A RÉSUMÉ OF THE LITERATURE

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IN 1912, Emil Abderhalden, professor of biologic chemistry in Halle, Germany, formulated and published a new idea in physiology which, if it stands the test of time, as it appears to be doing, will go down in the history of medicine as epoch-making. It has been termed a "laboratory diagnostic test for pregnancy," especially valuable during the first four months of gestation; but in its ramifications and enlargements it appears to be far more than this, becoming in reality an almost mathematically accurate method of diagnosis of many organic diseases as well. Since the appearance of Abderhalden's first paper there have been a few dissenting voices, notably Engelhorn and Michaelis and Von Lagermarck, in Germany, and Heaney and Davis and Williams and Pearce, in this country; but the consensus of opinion among those who have studied and tested the method in over 3,000 cases is corroboratory. The possibility of errors in technique must be borne in mind in every negative case. In all his experience Abderhalden has never obtained a negative result with serum from pregnant women or animals. Moreover, an interesting side-proof was obtained when placental material injected subcutaneously or intravenously into males gave positive findings.

In studying the method Abderhalden gives, in his various contributions, the following axioms:

1. Positive findings show that the serum comes from a person with a placenta, but this does not show whether there is a living foetus present or not.

2. If the reaction is positive and there has been recent uterine hæmorrhage, even in the absence of other signs of pregnancy, an abortion is suggested.

3. The reaction generally grows weaker toward the end of pregnancy and increases again during the puerperium.

4. The rotatory action of the serum of the foetus sometimes differs from that of the mother's serum. This confirms the biologic independence of the maternal and foetal blood.

5. The ferment is present in the blood from the sixth week after the last menstruation until the end of the third week post-partum.

6. The ferment is present in ectopic gestation as well as in normal pregnancy.

7. Experiments on animals show that the reaction may be obtained within twenty-four hours after implantation of an ovum.

#### THE PHYSIOLOGIC BASIS OF ABDERHALDEN'S METHOD

Abderhalden's biologic test is based upon the principle that "when a foreign substance is introduced into the blood a specific ferment is elaborated which is capable of decomposing this material." These protective ferments (*Abwehrferments*) appear whether the foreign bodies gain entrance to the blood-current autogenously or by parenteral (subcutaneous, intravenous, or intraperitoneal) injection. They are strongly proteolytic, causing the proteolysis by hydrolytic cleavage, and work independently of the similar

protective action of the leucocytes. Moreover, they are specific in their action, in that they digest or break up protein substances of the same nature only as those which are introduced into the blood-current and not any proteid indefinitely. Ferments of this nature include the agglutinins, anaphylactogens, hæmolysins, precipitins, and other bodies of modern physiology.

The products of this protein digestion are primarily peptones, and ultimately amino-acids, both of which are soluble and diffusible and quickly appear in the dialysate of a diffusion-cell, where they can be recognized by testing with ninhydrin (tri-keto-hydrin-dehydrate) or by the biuret reaction—both constituting the dialysis method; or by subjecting the fluid surrounding the diffusion-cell to the optic test, in which the rotatory action of the fluid is noted before and after diffusion has occurred.

The specific ferment appearing in the blood of pregnant women results from the entrance into the blood-current of decidual, chorionic, and syncytial cells from the placenta, and this ferment possesses the property of digesting placental tissue. In order to carry out the test, two substances are necessary; namely, a fresh or recently extracted placenta and the serum from the woman in whom a pregnancy is suspected.

#### PREPARATION OF THE PLACENTAL TISSUE

A fresh placenta is carefully washed, both externally and by flushing through its vessels. This is done in order to remove all maternal and foetal blood, which will necessarily contain the protective ferment. The placenta is then cut into small pieces and boiled. The filtrate from this process contains the chorionic proteids, and it is this filtrate which is placed in the diffusion-cell with the suspected serum.

#### THE BIOLOGIC TEST, OR METHOD OF DIALYZATION

Boil one grain of coagulated placental tissue in ten times its volume of water; pour off the water, and repeat the process until the addition of a few drops of a ninhydrin solution or of a biuret solution gives no reaction. Abderhalden recommends the ninhydrin test as more exact and as permitting finer differentiation in color than the biuret test. Now place the placental tissue in a diffusion-cell provided with a membrane which allows peptone to pass but retains unsplit protein, and to it add 2 or 3 ccm. of blood-serum from the patient whose blood is to be tested. Surround the diffusion-cell with 20 ccm. of distilled water. Cover the liquid in the cell and that in the surrounding cell (the dialysate) with a layer of

toluol; place in an incubator for twelve to sixteen hours at a temperature of 98.6° F. (37° C.). At the expiration of this time, place 10 ccm. of the dialysate in a test tube, add 0.2 ccm. of a 1 per cent aqueous solution of ninhydrin and boil for one minute. "If protein derivatives are present, the mixture will turn a characteristic violet-blue color, and it may be assumed that the serum comes from a pregnant woman. If no color appears, it is to be assumed that the serum is from a non-pregnant woman."

The biuret reaction gives a pink color. If the digestive process is carried too far, the distilled water around the diffusion-cell will fail to give the biuret reaction, because all peptone has been reduced to amino-acids. It will continue, however, even at this stage, to give the ninhydrin reaction.

#### THE OPTIC METHOD

Place 1 ccm. of a 10 per cent solution of normal placental tissue in physiological salt solution and 2 ccm. of the serum to be tested in a small polarization tube. Read the initial rotation, then place the tube in an incubator and test the change of rotation at various intervals up to thirty-six hours. Serum from pregnant women will give a change in rotation from 0.05 to 0.2 degree, while the maximum change with serum from non-pregnant women never exceeds 0.03 degree. Abderhalden has devised a special polarimeter for this test.

#### ABDERHALDEN'S TEST IN GENERAL PATHOLOGY

That it is an accurate means of early diagnosis of pregnancy, is not the only claim for this method—the underlying principle is much more far-reaching than this. Any abnormal change developing in any part of the body reacts upon the blood-current and produces in it some antibody or protective ferment to counteract the pathologic alterations or the toxins produced thereby. Thus, carcinoma and sarcoma in their varying aspects generate by their presence hæmic ferments capable of digesting the peculiar cancerous or sarcomatous growth producing them. The early appearance of these antibodies or ferments, occurring as they probably do within seven or eight weeks of the appearance of the neoplasm, renders an early diagnosis of malignancy possible, before metastasis or general body involvement has occurred, and thereby strongly enhances the possibility of total eradication of the growth by surgical measures promptly instituted.

Webster has lucidly stated the probable underlying law in the application of Abderhalden's



test to general pathology, as follows: "The proteins of the various organs are chemically different; that is, the component amino-acids, of which the protein molecule is composed, are different in type and amount in the various specific tissue proteins. It is reasonable to suppose, therefore, that the ferments in the serum of cancer patients might digest the protein of certain cancerous tissue and not of others. For this reason, one must use as the substrat [substance to be hydrolyzed] in the Abderhalden test for cancer many different cancerous tissues in order to be sure of his test." This would seem to indicate that the pathologist must keep on hand in his laboratory many stock substances representing the various tumors and pathologic tissues found in the human body wherewith to test the serum of the patient whose pathologic condition is to be diagnosed by the dialyzation method.

#### SERODIAGNOSIS OF INFECTIOUS DISEASES

Ernst Voelkel has extended the principle underlying the Abderhalden test to the diagnosis of bacterial infections. He prepared substrats of typhoid, diphtheria, and anthrax bacilli from agar cultures. He obtained trypanosome proteid from the blood of an infected guinea pig by means of centrifugation. He also carried out experiments with the spirochæte, using as a control horse-serum, since he was unable to separate the organisms from their culture media. His results with the typhoid bacillus were very favorable; also with serum from human beings infected with syphilis; but in the case of all other bacilli the experiments did not result favorably. In all syphilitic and parasymphilitic disorders Wegener found that the serum caused cleavage of brain-substance but not that of other organs. Frank and Rosenthal found that no relationship could be traced between the blood-ferments and immune bodies.

#### ABDERHALDEN'S TEST IN PSYCHIATRY

As Simon has stated, a natural corollary of the biologic test of pregnancy was an experimental investigation of the psychiatric problem "of the long-suspected connection between certain mental diseases and the functional activity, namely, derangement, of the sex glands." Degenerative processes in the nervous tissue of the brain and of the spinal cord are now believed by Fauser, Simon, Beyer, Wegener, and other observers to throw into the blood-stream, cells or other foreign substances which excite the development of a specific ferment capable of decomposing the proteins of the brain and cord. In corroboration of

this belief, it is well known that in dementia præcox the tissues of the genital glands are more or less affected; and as Webster has stated, "We find the serum of patients with dementia præcox hydrolyzing testicular tissue if the patient be a male, and ovarian tissue, if the subject be a female, much more markedly than it breaks up any other tissue. In epilepsy cortical tissue is especially acted upon [in those cases in which dementia is present], while testicular and ovarian tissues are not at all affected." It is interesting to note that "these ferments are so specific that the ferment of one sex will not affect the glands of another sex; that is, the serum of a woman will not digest testicular tissue nor will that of a man digest ovarian tissue." Experiment has also shown that the organs of animals cannot be used in this test, but only those removed from a cadaver, not later than from six to twenty-four hours after death.

The following precautions have been suggested:

1. The organs should be taken from the cadaver of a patient who has not died after a long agony and has not suffered from an infection or high fever shortly before death.
2. The organs should be removed with aseptic precautions.
3. Organs containing much fat are not well suited to the test.
4. After having been cut up, boiled, and tested until free from substances reacting with ninhydrin, the organs should be preserved in the water in which they have been boiled between a layer of chloroform and a layer of toluene.
5. A control test should be made with a piece of the tissue and normal serum, and also a test should be made of the serum alone.

In maniacal depressive insanity, proteolytic ferments could not be demonstrated in the serum by the various experimenters, thus indicating that the test may serve as an aid in differential diagnosis.

Webster believes that as soon as the proper substrats are established, Abderhalden's test should be capable of almost exact diagnosis in the difficult field of psychiatry, whereby medico-legal questions would be much more amenable to solution.

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# ABSTRACTS OF CURRENT LITERATURE

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## GENERAL SURGERY

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### SURGICAL TECHNIQUE

#### ASEPTIC AND ANTISEPTIC SURGERY

**Goebel, F.: Disinfection with Corrosive Sublimat and Tribrom-Beta-Naphthol; with a Study of the Method of Testing Disinfectants.** (Über Desinfektion mit Sublimat und Tribrom- $\beta$ -Naphthol nebst Beiträgen zur Methodik der Prüfung der Desinfektionsmittel). *Dissertation*, München, 1913.  
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Cultural experiments as to the effect of corrosive sublimat on streptococci showed that in a 1 to 5 per cent solution it is not at all reliable. It proved effective against non-pathogenic vibrios even in the severest tests, but was less effective against typhoid bacteria. Tribrom-beta-naphthol is an excellent disinfectant that acts quickly, certainly, and uniformly, when used in a solution not weaker than 1 per cent.

It killed the bacteria on which it was tested within a minute. It was less effective against tubercle bacilli.

Fritz Loeb.

#### ANÆSTHETICS

**Sourdat, P.: Local Anæsthesia in Nephrectomy for Renal Tuberculosis** (L'anesthésie régionale dans la néphrectomie pour tuberculose rénale). *Bull. et mém. Soc. de chir. de Par.*, 1914, xl, 504.

By Journal de Chirurgie.

Local anæsthesia is admirably adapted for nephrectomy, which is a unilateral operation. By infiltrating the nerves near their point of emergence from the spinal foramina the anæsthesia is deep enough to render any inhalation unnecessary; in very difficult cases the inhalation may be greatly reduced and shortened.

In the first of the five nephrectomies performed by Sourdat and Pauchet they used Braun's method, but in the last four they used Kappis' technique, as it is simpler, surer, and more rapid, and assures a better deep anæsthesia, as the injection is made near the origin of the nerves. At 3 cm. from the mid-spinal line and parallel to it he traces a narrow band of infiltration in the skin extending from the seventh dorsal spine to the fourth lumbar, using a 0.5 per cent solution of novocaine. Into this insensitive line at the level of each spinous process he introduces a fine needle, perpendicular to the wall. At a variable depth it reaches either a rib (dorsal vertebra) or a transverse process (lumbar vertebra).

To infiltrate the intercostal nerves he slips the needle under the lower edge of the rib to a depth

of 0.5 cm. and injects 5 ccm. of a 0.5 per cent novocaine-adrenalin solution, or 4 ccm. of a 2 per cent solution. For the lumbar nerves he finds the upper edge of the transverse process, passes 1 cm. beyond it and a little inward, and injects the analgesic solution. Generally, it is necessary to infiltrate the last five intercostals and the first three or four lumbar nerves.

J. DUMONT.

#### SURGICAL INSTRUMENTS AND APPARATUS

**Bates, U. C.: A New Self-Retaining Abdominal Retractor and Wound Protector.** *Surg., Gynec. & Obst.*, 1914, xviii, 753. By Surg., Gynec. & Obst.

This apparatus has four retractor blades working through slots in an oval frame eight inches wide and nine inches long. Each blade can be held in any position desired by a ratchet device, released by pressing a button. The blades work through a funnel-shaped piece of rubber so that when the retractor is in place, the margin of the incision and the adjacent field are completely protected from septic material from within and without, obviating the use of towels for this purpose.

By means of this retractor any degree of retraction in any direction required may be obtained, thereby exposing any quadrant of the operative field desired. It enables the operator to get a larger field through a smaller incision. By reason of its self-retaining properties the abdominal wall can be raised, materially assisting in the introduction of the packing gauze used to cofferdam the intestines from the field.

After the packing is in place it is retained by the tension of the abdominal wall and the upper blade of the retractor. The rubber stretching from one blade to another makes retraction over the whole circumference of the wound, thus preventing pressure and traumatism by the blades, and the pressure of the rubber prevents any oozing from the wound surface.

**Gifford, H. C.: Instruments for Measuring Joint Movements and Deformities in Fracture Treatment.** *Am. J. Surg.*, 1914, xxviii, 237.

By Surg., Gynec. & Obst.

The author describes four instruments devised by him for measuring various joint movements, giving directions for their use and showing photographs of them.

No. 1 is for measuring the lateral motion at the ankle-joint.

No. 2 is for measuring the flexion and extension of the foot and also the position of the foot with regard to the leg, anteroposteriorly.

No. 3 is for measuring the angulation of the knee, elbow, and wrist, and the carrying angle at the elbow.

No. 4 is for measuring the circular movement of the radius.

JAMES O. WALLACE.

**Thompson, H. B.: A Useful Splint for Fracture of the Upper End of the Humerus.** *Northwest Med.*, 1914, vi, 164.

By Surg., Gynec. & Obst.

The author describes a figure-4 splint, which he has used in a number of fractures of the humerus, near the shoulder. He mentions the fact that Scudder has described it, but, as he has not seen it used by other physicians, he calls attention to the method. In most fractures of the upper end of the humerus, the small upper fragment is pulled outward and forward, and to get good approximation the arm must be held in abduction with the elbow forward; the abduction and forward position of the elbow can be changed to any desired angle. The sides of the enclosed part of the figure-4 need not be very long — 2 to 4 inches for a child, up to 5 inches

for an adult. It is better to make the splint too small and pad it with cotton in the axilla. It is held in place by adhesive strips half way around the body at the nipple and the umbilicus, also around the arm and forearm. The whole is immobilized by a bandage through a splint around the arm and forearm, then around the body. An X-ray is shown of a case supposed to have been reduced with the arm at the side of the body, but in reality the bone was not approximated at all. It was then put up with the figure-4 splint and an X-ray taken which showed the fragments in apposition.

C. A. STONE.

**Lewisohn, R.: A New Œsophagoscope.** *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxiii, 78.

By Surg., Gynec. & Obst.

The author describes a new Œsophagoscope, which is a complicated rectangular instrument consisting of a horizontal part, which lies in the mouth, and a telescopic portion consisting of six tubes which are released by means of a long spring, and supplied with a series of lenses and mirrors for the purpose of light reflection by which the view obtained is inverted but not reversed. No forceps have been devised to use through the tube.

ELLEN J. PATTERSON.

## SURGERY OF THE HEAD AND NECK

### NECK

**Theisen, C. F.: Acute Thyroiditis as a Complication of Acute Tonsillitis.** *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxiii, 1.

By Surg., Gynec. & Obst.

The author reports the histories of seven cases in which acute non-suppurative thyroiditis developed in a previously healthy gland of normal size either during, or directly following, an attack of tonsillitis.

The acute condition subsided under treatment in about ten days, but two cases after repeated acute attacks developed well-marked goiter, and two cases developed hyperthyroidism.

A study of the literature shows that simple thyroiditis which runs its course without suppuration, is a rare disease, and a primary acute inflammation of the thyroid gland is so rare that it is almost never seen, only thirteen cases having been reported.

ELLEN J. PATTERSON.

**Hirschfeld, L. and Klinger, R.: Studies of Endemic Goiter** (Studien über den endemischen Kropf). *München. med. Wchnschr.*, 1914, lxi, 246.

By Journal de Chirurgie.

The authors' experiments on rats confirmed the statistical results published heretofore. The latter experiments, like the former, indicate a transmission of the virus by direct contact rather than through the water.

KOCHER.

**Broeckeaert, J.: A Case of Suffocating Goiter; Study of a Series of Fifty Operations for Goiter**

(À propos d'un cas de goître suffocant: considérations au sujet d'une série de 50 extirpations de goître). *Ann. Soc. belge de chir., Brux.*, 1914, xxii, 11.

By Journal de Chirurgie.

The author presented a young man of 20 who had been operated on for a goiter that caused the most extreme dyspnea. Besides the enlargement of the lateral lobes there was retrosternal prolongation the size of a mandarin orange that compressed the trachea. This prolongation and the right lobe were enucleated under local anæsthesia. He left the hospital at the end of two weeks in excellent condition.

The author has operated on 50 cases of goiter, only 4 of them being in men. Seven of them were true primary exophthalmic goiter with the classical symptoms; besides, some of the patients showed severe general symptoms. All recovered, and the pulse fell to 80 or 90. In 4 there was absolute and complete recovery, and one of the operations was seven years ago; the three others resumed work and were practically cured, but a certain degree of exophthalmos persisted and some slight subjective symptoms. There were no recurrences.

Such results—50 thyroidectomies, 7 of them for exophthalmic goiter, without a single death—show thorough technique and judicious selection of cases. Cases that show profound cachexia, myocarditis,



albuminuria, or diffuse œdema should not be operated on. But sometimes even in severe cases of Basedow's disease the author follows Kocher's plan of performing several successive operations, often with unhoped-for results. Generally, he operates only after the failure of medical treatment; but manifestly it would be useless to attempt medical treatment in cases of cystic, calcified, or osseous goiter. Operation should be performed at once when a simple goiter begins to show signs of Basedow's disease, and also when there are signs of compression. He prefers local anæsthesia, except in children and nervous patients. He thinks sub-

capsular enucleation the quickest and least dangerous method of operation. When it is necessary to remove the diseased lobe with its capsule as in exophthalmic goiter, he takes care to spare the posterior part of the capsule, thereby avoiding the recurrent laryngeal and the parathyroids. The greatest care should be taken to avoid venous hæmorrhage; the veins must be ligated carefully, not merely crushed. As for the choice of operation in exophthalmic goiter, he prefers hemithyroidectomy combined with resection of the upper half or, exceptionally, with ligation of the upper pedicle of the opposite lobe. J. DUMONT.

## SURGERY OF THE CHEST

### CHEST WALL AND BREAST

**Fort, R. E.: Total Excision of Clavicle and First Rib, for Malignant Disease.** *Surg., Gynec. & Obst.*, 1914, xviii, 696. By Surg., Gynec. & Obst.

The patient, a boy aged eleven, with negative family history, had a tumor of eight months' duration. Three months after another surgeon had chiseled away part of the tumor, it was submitted to Dr. Litterer, pathologist of Vanderbilt University, who reported giant-cell osteosarcoma. The tumor rapidly reproduced itself, and when seen on July 23, 1913, it was the size of an English walnut, smooth, hard, and firmly attached to the inner third of the clavicle and first rib. A T-shaped incision was made from the sternum along the lower border of the clavicle, to the coracoid process of the scapula, and from the upper portion of the sternum to the upper border of the second rib, and the clavicle disarticulated from the sternum and first rib. Excision was accomplished by working from within outward. The same method was followed in the excision of the rib, which was by far the most difficult part of the procedure. A padded retractor was used to hold up the vessels. Considerable difficulty was encountered in disarticulating the rib from its vertebral attachments. This was accomplished by inserting blunt scissors into the articulation; half of the sternum was removed from its upper portion to the second rib. The author regards protection of the mediastinum and pleura as one of the most important steps, practically all of the immediate mortality being due to infection.

The wound was closed and a cigarette drain inserted. No vessel was ligated during the operation and there was no injury to the mediastinum or pleura. Recovery was uninterrupted.

**Zesas, D. G.: The Question of Pleural Reflexes** (Zur Frage der pleurogenen Reflexe). *Zentralbl. f. Chir.*, 1914, xli, 371.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

There are two diametrically opposite theories to explain the nervous symptoms observed after opera-

tions on the pleura: that of pleural reflexes and that of air embolism in the arteries.

The first theory is supported by the fact that where an injection of morphine is given before a puncture of the pleura there is no attack of general spasms with loss of consciousness, and that if the spasms appear they immediately disappear after an injection of morphine. Breuer has tried to show from his cases and autopsies that such cases are caused by emboli originating in the pulmonary veins.

Zesas does not believe that Breuer's results disprove the reflex theory, but believes they only show that nervous disturbances appear that may be due to arterial air emboli. He assumes that the nervous disturbances may be of different origins, caused by pleural reflexes as well as by arterial emboli. Clinical and experimental results seem to indicate that the reflex effect is the more frequent, from which the practical conclusion is drawn that every operation on the pleura should be preceded by an injection of morphine to allay nervous irritability. KOLB.

### TRACHEA AND LUNGS

**Lillenthal, H.: Pulmonary Abscess and Bronchiectasis.** *Ann. Surg.*, Phila., 1914, lix, 855. By Surg., Gynec. & Obst.

The author bases his conclusions on the study of fourteen cases of non-tuberculous suppuration of the lung. Fourteen operations were performed on eleven patients. One patient was not operated on. Two patients were still under treatment. There were four deaths and three actual cures. The conclusions are as follows:

1. The differential diagnosis of true lung abscess and suppurative bronchiectasis is important.
2. Radiographic study of each case is essential.
3. Bronchoscopic examination is a valuable procedure, and should not be omitted.
4. Drainage of a lung abscess by thoracotomy is likely to result in cure.
5. Drainage of large infected bronchiectases may be followed by improvement, but complete recovery is unlikely.

6. Extensive thoracoplasty should be reserved for those cases where operations have failed.

7. Exploration of the lungs by intercostal thoracotomy is feasible and reasonably safe.

8. Extirpation of a bronchiectasis by removal of the affected portion of lung may lead to recovery.

9. Artificial pneumothorax and Tuffier's extrapleural tamponade should be reserved for cases of pure tuberculosis.

10. Intratracheal insufflation is a simple, accurate, and safe method of securing differential pressure.

11. Operations involving one lung can be performed with inhalation anaesthesia.

BARNEY BROOKS.

### PHARYNX AND OESOPHAGUS

**Walker, I. J.:** Spontaneous Rupture of the Healthy Oesophagus. *J. Am. M. Ass.*, 1914, lxii, 1952.

By Surg., Gynec. & Obst.

The author reports a case of rupture of the oesophagus occurring in a Swedish granite-cutter, aged 30. Seven hours before the patient was seen, he had eaten a very heavy meal and had taken two drinks of whiskey. One hour later he vomited, during which effort he felt a sharp pain in the epigastrium and left lower chest. When seen he had a pulse of 120, temperature 97.6°, some cyanosis, and he had an anxious expression. The whole abdomen was rigid, but especially the upper half, where there was marked tenderness and spasm. Liver dullness was present. At operation the liver

was seen to be enlarged and a cholecystostomy was performed. All other organs were normal.

During the first few hours after operation the temperature and respirations rose. On examination the left chest was found to be flat in the lower half and there was diminished breathing and voice sounds. Aspiration gave a straw-colored fluid. The pleural cavity was drained by resecting a rib, after which the respirations immediately improved. On the following morning it was found that the nourishment given was passing through the chest. A gastrostomy was performed under local anaesthesia and the patient fed through the opening. Temporary improvement followed, but death occurred 172 hours after rupture of the oesophagus.

Autopsy, 10 hours later, showed the liver to be enlarged and the abdominal and pelvic viscera below it to be normal. A rupture of the extreme lower end of the oesophagus was found in the left pleural cavity. The opening was two inches long, extending upward from the cardiac end. The rupture was on the posterior wall. The edges were clean-cut with no evidence of ulcer, new-growth, or diverticulum.

The author finds the undoubted cases in the literature to be 22 in all; 20 males and 2 females, 11 of whom used alcohol. None of the patients recovered. The following conclusions are reached:

1. Spontaneous rupture of the apparently healthy oesophagus is a rare condition.
2. The exact cause is not known.
3. An accurate diagnosis is difficult to make.
4. The mortality will always be high.

EDWARD L. CORNELL.

## SURGERY OF THE ABDOMEN

### ABDOMINAL WALL AND PERITONEUM

**Katz, D. A., and Lichtenstern, D. R.:** Disturbances in Carbohydrate Metabolism after Laparotomy (Über eine Störung des Kohlehydratstoffwechsels nach Laparotomie). *Biochem. Ztschr.*, 1914, lx, 313. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author's experiments show that in dogs, cats, and rabbits there is a temporary disturbance of carbohydrate metabolism after laparotomy. In dogs it is generally manifested by glycosuria, in rabbits and cats by hyperglycemia. The glycosuria generally disappears after 36 hours. The sugar content of the blood in animals on whom laparotomy was performed after the experimental production of kidney injuries was variable, depending on whether the nephritis was mild or severe. Kidney disease did not seem to influence the glycosuria even in dogs, nor where there was a high sugar content in the blood. Extirpation of the thyroid had no effect on the glycosuria. Infusion of sugar in animals after laparotomy, with or without nephritis, showed such varying results that no rules can be established with regard to it. LANGE.

**Schulz E.:** Intra-Abdominal Pressure and Distribution of Blood in Enteroptosis (Über intra-abdominalen Druck und Blutverteilung bei der Enteroptose). *Deutsche Arch. f. klin. Med.*, 1914, cxiii, 402. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author discusses the views expressed in the literature regarding intra-abdominal pressure and gives the results of his own experiments. They may be summarized as follows: With an increase in volume, the contents remaining the same, there is a decrease in the hydrostatic pressure of the whole cavity, and a negative pressure zone develops in the upper part. The falling pressure is partly compensated for by a distention of other hollow organs and suction of their contents. One important factor in this compensation in man is the filling up of the vessels passing through the abdominal cavity.

Experiments in changing the distribution of the blood in normal men showed that on changing to a recumbent position there was an increase in the volume of blood in the arm, on the change to the upright position a decrease, but this did not occur under pathological conditions.



In enteroptosis, change in position had no marked effect on the distribution of blood. But a favorable effect on the enteroptosis was shown by Glénard's manipulation or the application of an abdominal binder, while in normal persons they did not produce any noticeable effect. It is probable that the adaptation of the previously dilated abdominal vessels to the changed condition does not take place for a considerable time, so that the real permanent effect of wearing a binder does not become evident until after the lapse of weeks or even months. The usefulness of such therapeutic measures seems to be proved by the experiments, since the symptoms in enteroptosis are really due to disturbances in circulation and their results.

BODE.

**Lyman, C. B., and Bergtold, W. H.: Amniotic Membrane for the Prevention of Post-Operative Peritoneal Adhesions: a Preliminary Note.** *Surg., Gynec. & Obst.*, 1914, xviii, 762.

By Surg., Gynec. & Obst.

Amniotic membrane is used to prevent post-operative adhesions, either when the adhesions have preëxisted and have been broken up during the operation, or when the surgical exigencies would result in adhesions. Membranes are selected from healthy individuals, washed thoroughly in running water, immersed for twenty-four hours in a one per cent formaldehyde solution (watery), and preserved for future use in 0.5 per cent formaldehyde in 70 per cent alcohol.

When used, the membrane is stitched over the denuded areas with catgut. Its advantages are: (1) It can be secured readily in sheets of any reasonable size; (2) it is sterile to begin with, easily prepared and preserved. In the seven cases in which it has been utilized up to date the results have been most satisfactory, and have entirely obviated the pre-existing symptoms ascribable to peritoneal adhesions.

The present results seem to warrant conclusions as follows: 1. The method is harmless. 2. It seems to prevent the formation of peritoneal adhesions. 3. It is easy of application. 4. It is worthy of further trial.

#### GASTRO-INTESTINAL TRACT

**Pauchet: Double Gastric Stenosis; Triple Anastomosis; Recurrence of Symptoms from Peptic Ulcers; Gastrectomy; Recovery** (Double sténose gastrique — estomac en sablier et duodénale; triple anastomoses; retour des accidents par ulcères peptiques; gastrectomie; guérison). *Bull. et mém. Soc. de chir. de Par.*, 1914, xl, 528.

By Journal de Chirurgie.

Pauchet reports a case of hour-glass stomach caused by a large ulcer of the lesser curvature; there was also a duodenal stenosis. He performed a gastrogastrostomy and a gastro-enterostomy. The result was good for a year and then two peptic ulcers developed at the openings. A second operation was performed and the lower pocket of the

hour-glass, the gastrogastriic anastomosis; and the jejunal loop were resected; only a part of the upper pouch was preserved and implanted in the jejunum. The operation was easy and the results good.

The author is more and more convinced of the inefficacy of gastro-enterostomy and systematically employs extensive resection—not excision of the ulcer, but gastrectomy, in even the simplest cases of gastric ulcer. He thus removes the ulcer completely, suppressing the zone of peptic glands; he has no fear of recurrence, of peptic ulcers, or late cancerous degeneration; drainage is perfect so that the functional results are complete and permanent. In conclusion, he calls attention to the striking symptoms following lavage of the peritoneal cavity with ether during a gastrectomy. Two minutes later, the patient became pale and covered with violet spots like a corpse. Though oxygen was given this appearance lasted for four hours and he thought the patient was never going to awaken. At the end of that time, however, her color became normal and she recovered.

CUNÉO has only practiced gastrectomy four times for ulcer, but his experience confirms Pauchet's conclusions.

QUÉNU also finds Pauchet's method advisable for peptic ulcers but doubts its applicability to all cases of gastric ulcer. A discussion followed on the accidents, some of them fatal, following the use of ether to irrigate the peritoneum. All agreed in insisting that the peritoneum must be thoroughly dried before closing the abdomen. J. DUMONT.

**Delore: Peptic Ulcer after Gastro-Enterostomy** (Ulcère peptique après une gastro-entérostomie). *Lyon chir.*, 1914, xi, 539. By Journal de Chirurgie.

Delore performed a gastro-enterostomy, in 1910, on a man of 40 for stenosis of the pylorus. His patient had a long period of complete health and then showed signs of stenosis again. Radioscopy showed that the jejunal opening was functioning well and that the stomach was not dilated. On operation, a fibrous stenosis of the pylorus was found, and a peptic ulcer of the jejunum immediately below the anastomosis. The ulcer had perforated and was covered by colon. It was excised. It is the first peptic ulcer that the author has found among his patients. He does not believe it was due to faulty technique, because it appeared several years after an operation that had given satisfactory results for a long time. He thinks that peptic ulcer is only a recurrence of the ulcerous process.

GAYET recently observed a jejunal peptic ulcer after gastro-enterostomy. He had operated on the patient ten years before with a Jaboulay button. He reoperated and found complete stenosis of the anastomosis. He then performed a very extensive posterior gastro-enterostomy and resected the pylorus, which was somewhat indurated. Five or six years later his patient returned, complaining of a burning sensation that was helped by sodium bicarbonate; recently he had had intestinal hæmorrhage.



rhages, which examination showed were due to a jejunal ulcer. He has not yet been operated on again.

LERICHE, in 1908, saw an ulcer of the opening after posterior gastro-enterostomy with a button. On reoperation there was an enormous plaque of inflammation infiltrating the mesocolon and retracting the opening. Patient recovered after jejunostomy. The next year there was another recurrence, and finally death. On autopsy the gastrojejunal ulcer was healed, but there was a large recent ulcer of the lesser curvature. There are, therefore, recurrences in spite of everything. These ulcers seem to be trophoneurotic in origin and in such cases Leriche advises operation by dorsal root-section.

DESGOUTTES recently operated on a patient who had had a gastro-entero-anastomosis four years previously with a Jaboulay button. He had suffered a great deal. Desgouttes found the anastomosis reduced to a thread, but a stylet could be passed from the stomach to the intestine. He cut this anastomotic band and made a new anastomosis.

BÉRARD reoperated on a patient on whom Delore had performed gastro-enterostomy with a button. He found the opening had completely closed. He has since given up the button and now makes his anastomoses with suture and clamps, and has never had a peptic ulcer.

VALLAS believes that anastomoses with the button may retract spontaneously. He has always used suture and has never had peptic ulcer or secondary obliteration.

R. LERICHE.

**Mallory, W. J.: Gastric Hypertony and Gastro-Enterostomy.** *J. Am. M. Ass.*, 1914, lxii, 1883.  
By Surg., Gynec. & Obst.

The author attempts to explain those cases in which there is a return of vomiting, pain, and other gastric symptoms following the operation of gastro-enterostomy by what is called gastric hypertony or stimulative vagus neurosis.

The stomach receives its nerve supply from (1) the vagus, which conveys tonic and motor impulses, (2) the sympathetic, which is inhibitory, and (3) the plexuses of Auerback and Meissner, which are both motor and inhibitory.

Eppinger and Hess are quoted as describing a condition of excessive vagus stimulation or an increase of the motor and sensory functions of the stomach coupled with other vagus phenomena. X-ray reveals a small stomach, tightly contracted, with occasional antiperistaltic waves.

In this condition, while at operation the stomach is usually relaxed, yet as soon as it begins to receive its usual stimuli there follows a spastic condition that contracts the new stoma and soon gives rise to a return of the old symptoms. X-ray examination, during an attack, shows a contracted stomach with no patency to the new stoma.

The author recommends a close examination in all gastric ulcer cases for the signs of vagotomy. They are: (1) bradycardia, (2) disturbance of respiratory rhythm, (3) bronchial asthma, (4)

dermography, (5) urticaria, (6) "head zoves," (7) low blood-pressure, (8) spastic constipation alternating with diarrhoea. In cases showing these signs a careful medicinal and hygienic line of treatment, both before and after operation, should be instituted.

PHILLIPS M. CHASE.

**Hartmann, H.: The Function of the Gastro-Enterostomy Opening, in Cases of Permeable Pylorus.** *Ann. Surg.*, Phila., 1914, lix, 832.  
By Surg., Gynec. & Obst.

Two problems are discussed, and the results of experiments performed by the author on dogs, together with X-ray findings following gastro-enterostomy, are given. The first problem to be discussed is, "Does the anastomotic mouth obliterate in the presence of a patulous pylorus?" Although the view that it does obliterate is accepted by Kelling, Tupper, Jaboulay, and others, Hartmann disagrees, being "unwilling to admit that the anastomosis thoroughly lined by mucous membrane and free from scar-tissue should become obliterated merely because of its non-use."

Forty-five cases in which the "mouth" became obliterated are mentioned. He concludes that obliteration results sometimes from the cicatrization of a peptic ulcer which has developed in the mouth. Obliteration of the anastomosis is exceptional in cases not operated on with a button or by the Y-method.

On the other hand, the integrity of the anastomosis has been anatomically ascertained, in cases of pylorus, to be functionless by Heuck, after 3 months; Busch after 6 years; by the author after 5 years.

The second problem: "Are the gastro-intestinal anastomoses functionally useless in cases of permeable pylorus?" The generally accepted theory is that if it remains patent it is useless.

The facts do not agree absolutely with these conclusions. Legueu, Delbet, Pess, Gray, Pelrea, Hartel and Hess have observed the gastric contents pass through the pylorus and through the gastro-intestinal mouth.

Hartman's experiments show that evacuation is principally by the anastomosis if it is situated on the pyloric antrum, and through the pylorus if it is situated on the fundus of the stomach. The different modes of evacuation find an explanation in the difference in the force of muscular contractions in different parts of the stomach. Pressure is very weak near the fundus and very strong near the pylorus.

Radiologic observations are in accord with the author's experimental findings that the gastro-intestinal mouth may work where there is a patulous pylorus.

ISIDORE COHN.

**Downes, W. A.: Pyloric Obstruction in Infants; a Report of Twenty-Two Personal Cases with Operation.** *J. Am. M. Ass.*, 1914, lxii, 2019.

By Surg., Gynec. & Obst.

The author reports 21 cases of pyloric obstruction in infants, in which surgical treatment was carried



out. There were eight deaths, three of which were not due to the operation.

From a study of these cases the author submits the following conclusions:

1. Hypertrophic pyloric stenosis is congenital to the extent that there is an increase in the thickness of the circular muscle-fibers at the pylorus. The presence of this thickened muscle-fiber reduces the lumen of the pylorus; and therefore the stomach, in order to empty itself, contracts more forcibly than normal. This abnormal contraction soon causes the mucous membrane to become thickened and oedematous, and assume a more or less spiral arrangement as it passes through the narrowed pyloric channel of from  $\frac{1}{2}$  to  $\frac{3}{4}$  inch. The result is a valvular action which gradually produces complete closure of the pylorus. The question as to whether or not the pylorus will admit a probe or catheter at operation or necropsy is of little consequence when weighed against the clinical evidence of complete obstruction.

2. That there is sufficient time between the onset of symptoms and the appearance of the signs of complete obstruction, for careful observation and the carrying out of any medical measures likely to prove of benefit, there can be no doubt, provided, of course, that the early symptoms have been properly interpreted. The fear, however, that the condition may have existed longer than has been suspected, and that the vitality of the baby is not so good as appearances would signify, causes the author to feel that operation is indicated in every case of hypertrophic stenosis as soon as the diagnosis is made. Should depression or early evidence of shock be present, immediate operation is demanded.

2. The babies coming to operation in good condition suffer little or no shock; their convalescence is straightforward, and they are at once restored to normal health.

BARNEY BROOKS.

**Holt, L. E.: Medical Versus Surgical Treatment of Pyloric Stenosis in Infancy.** *J. Am. M. Ass.*, 1914, lxii, 2014. By Surg., Gynec. & Obst.

The paper is based on the study of 57 cases of pyloric obstruction in infants. The symptoms, diagnosis, and treatment are discussed. The most characteristic symptom is projectile vomiting, usually occurring when the age of the child is five to seven weeks old. Persistent vomiting during the first few days after birth is not often due to pyloric stenosis. The diagnosis can usually be made from the symptomatology alone. Besides visible gastric peristalsis the most valuable information can be obtained from measuring the stomach contents a few hours after ingestion of a known amount of non-coagulable food. Such information is more valuable than that gained from röntgen-ray study after a bismuth meal.

The author believes the generally accepted classification of these cases with the hypertrophic and spastic types is unwarranted and misleading, in that probably all have a similar pathology. He thinks it better to divide them into mild and severe.

The advantages and disadvantages of following either the medical or surgical methods of treatment are discussed in detail. The author believes that the pathological condition responsible for the symptoms is of such a nature that it disappears in time, and that the surgical treatment should be carried out in these cases in which it seems reasonable that the mechanical treatment will not serve to keep the patient in fair nutrition until the condition is relieved. The indications for operation are: (1) No diminution in the vomiting or gastric peristalsis by stomach washing and diet; (2) a steady loss of weight of one to two ounces per day; (3) marked gastric retention; (4) absence of fecal stools.

The author minimizes the importance of a palpable tumor both as a diagnostic sign and as an indication for operation.

BARNEY BROOKS.

**Quénu, E. and Constantini, H.: Indications for Resection of the Intestine in the Radical Treatment of Certain Hernias** (Des indications de la résection intestinale dans la cure radicale de certaines hernies). *Rev. de chir.*, 1914, xlix, 401. By Journal de Chirurgie.

The authors discuss resection of the intestine in the radical treatment of certain hernias, when there are no complications, and especially no strangulation. Hernias containing new-growths and tubercular foci are rare and therefore of little interest. Adherent and irreducible hernias constitute the great majority of the cases in which enterectomy is indicated. The nature of the adhesions, the structural changes and injuries of the intestine in the course of freeing them may be indications for an enterectomy in hernia. It was first practiced by Julliard and is still considered a serious operation.

The authors report 12 cases—three of them their own—with only one death. They express a scepticism as to the freeing of adhesions which would be surprising were it not for the fact that the adhesions in their three cases were inflammatory in nature and difficult to treat in any other way. In contrast with the results furnished by enterectomy they cite the accidents observed in certain conservative operations, such as intestinal occlusion and artificial anus. In irreducible hernias the severity of the operation is dependent on the length of the intestine which must sometimes be resected. As reduction *en masse* involves the danger of cardiopulmonary accidents, or crises of occlusion, abstention from operation is the rule generally followed.

J. OKINCZYC.

**Bartlett, W.: A Clamp Intended to Facilitate the Suture-Anastomosis of Hollow Viscera.** *Surg., Gynec. & Obst.*, 1914, xviii, 761.

By Surg., Gynec. & Obst.

The author holds that in stomach and intestinal surgery, in making an anastomosis, operators require the aid of an instrument to hold the viscera fixed in position, to prevent escape of the contents and to produce hæmostasis.



He tells of the disadvantages of the instruments he formerly used, and gives the details of construction and the use of an aluminum one which he has employed since June, 1913. This clamp has three blades, a narrow middle one and two lateral ones which are 5 inches long by  $1\frac{3}{4}$  inches wide. These broad flanges are swung closer together at their bases by setscrews which give the surgeon control of the amount of compression and allow the most delicate adjustment. Compression is thus uniform throughout the length of the blades and the viscera are prevented from slipping out of the grasp.

In a gastro-enterostomy, one lateral blade and the middle blade are forced together upon the compressed intestine while the operator's hand tightens the screw on that side. This is repeated on the stomach with the other lateral blade and in this position the instrument presents a plate 5 inches by 4 inches, which effectually keeps the field clear and unsoiled.

**Fromme, A.: Intestinal Invagination and Spastic Ileus** (Über Darminvaginationen und spastischen Ileus.) *Deutsche Ztschr. f. Chir.*, 1914, cxxvi, 579.  
By Journal de Chirurgie.

The number of cases of intestinal invagination observed, or at least published, in Germany is small in comparison with other conditions, at least so far as acute intestinal invagination in children is concerned. The reason for this is not known.

The author has studied the cases treated at the Göttingen clinic for the last 17 years, and found that there were 22 cases of acute and 10 cases of chronic invagination, all of which were operated on. As in all previous reports, there were almost twice as many cases in the male sex as in the female—66:34 per cent. The cause of the acute invaginations was trauma in three cases, twice a previous intestinal catarrh, and in the other cases unknown. The invagination is the result of a spasm of the intestine, and not of a paralysis, so it frequently appears when abnormal decomposition of the ingesta has caused a condition of increased contraction in the small intestine. This explains the fact that in 10 children less than a year old the disease occurred in the five summer months in every case.

Invaginations are observed as a result of several diffuse or circumscribed spasms. The clinical picture is then similar to that of the so-called spastic ileus. Detailed case histories of two such cases are given. Such spasms also take place from contusions of the abdominal wall, ulcers in the intestine, and foreign bodies. It is occasionally observed in hysteria. The site of the invagination in the great majority of cases is the ileocaecal region. The chief symptoms are the discharge of blood and a swelling. The prognosis depends on the treatment. If the symptoms have only recently appeared, a brief attempt should be made at conservative treatment; viz., anaesthesia, taxis, and injection of water. If this fails, operation should be undertaken, an attempt being made at disinvagination by pressure

on the apex and traction on the invaginated section. If this is not successful and resection has to be performed, the prognosis becomes very much more unfavorable.

Since recurrences are rare the author does not think it is necessary to take any special precautions to avoid them. Chronic invaginations are generally caused by tumors. Chronic invaginations are more frequently observed in Germany. Only adults are so affected. The ileocaecal form predominates here also. The diagnosis is extraordinarily difficult. Malignant tumors are generally diagnosed. The only treatment is operation: resection, extirpation of the tumor, exclusion of the invaginated part of the intestine by anastomosis. In conclusion the histories of the 32 cases are given. KNOKE.

**Summers, J. E.: Suggestions Regarding the Anatomy of, and the Surgical Technique in, the Treatment of Jonnesco's Membrane.**  
*Ann. Surg.*, Phila., 1914, lix, 848.

By Surg., Gynec. & Obst.

Summers believes that "every thinking, informed man to-day should concede that all of these membranes are congenital"; further, that these membranes can be demonstrated "to a greater or less degree in every abdomen."

If these membranes are congenital they have a function, that of aiding the bowel in its work. When the membranes are so arranged as to interfere with function they become pathologic—this may be a defective or restrictive arrangement: defective when not properly supporting, and restrictive when they interfere with the function of the bowel.

Neither condition is observed in childhood; there the muscular tone is so positive that peristalsis overcomes minor difficulties. Most of the cases which present symptoms are past 30 years of age. Habit and long continued over-strain favor intestinal stasis from loss of tone.

Summers advises two procedures for the relief of intestinal stasis: (1) Release the bowel to permit freer function; (2) support the bowel, to increase muscular tone.

In excessive angulation from membranous restrictions, it may be advisable to exclude the colon.

When there is marked ptosis of the viscera the membrane should not be divided, but Coffey's or Connell's suggestions should be adopted.

"A properly fitting straight-front, front-lace corset will relieve many of the symptoms that depends upon these ptoses, provided proper habits of life are observed." ISIDORE COHN.

**Baxter, G. E.: Appendicitis in Infancy.** *Illinois Med. J.*, 1914, xxv, 374.  
By Surg., Gynec. & Obst.

The author reports a case occurring in a child 18 months old. The child was normally born and nursed at the breast for 10 months. It was in good health until it was a year old, when it had an attack of acute gastro-enteritis which lasted for 7 weeks.



The illness started while the child was out walking. It became peevish, irritable and later vomited its supper. Two days later it was found to be suffering with an acute abdominal pain, some distention, and was vomiting. The temperature was 102° and the pulse from 110 to 130. The next day the conditions were about the same except that there was a great increase in the abdominal tenderness and pain, but there was no sign of localization of the inflammation. The next day the child was found in a state of collapse with almost persistent vomiting of bile and dark liquid of a fecal nature. There was more abdominal distress and great distention. Intestinal obstruction was the diagnosis then made and the child was operated upon.

The appendix was found to be acutely inflamed, very much enlarged and perforated. A general peritonitis was also present. The child improved, following the operation, but the obstruction was not entirely relieved. It was operated upon again, an enterostomy being performed. It lived for about three weeks when it died of general sepsis. While appendicitis was considered in this case, it was not considered sufficiently important.

The author then takes up the frequency, symptoms, pathology, anatomy, and diagnosis of this condition. The diagnosis is taken up in detail and great stress is laid on the following points:

1. The character and significance of the crying in a babe suffering with pain should be studied.
2. Appendicitis does occur in infants, and probably more frequently than is recognized.
3. Every acute abdominal pain in the infant should arouse suspicion.
4. The tendency in infantile appendicitis is toward a rapidly developing septic peritonitis, which has a very high mortality.
5. Acute digestive disturbances in infants should be diagnosed by the process of elimination. This is urged because of the tendency of many physicians to diagnose acute digestive disturbances first.
6. The unimportance of subjective symptoms and the all-importance of objective symptoms is emphasized.
7. A careful, patient, thorough examination of the nude child should be made.
8. It is necessary to gain the confidence of the crying, restless babe in order to accomplish a satisfactory examination.
9. Early diagnosis means a lowered mortality.

EDWARD L. CORNELL.

**Frankenburger, J. M.: Hyperplastic Tuberculosis of the Colon.** *Tr. Am. Proctol. Soc.*, Atlantic City, 1914, June. By Surg., Gynec. & Obst.

The author believes that this form of tuberculosis of the intestine differs from other forms of intestinal tuberculosis, inasmuch as it is amenable to operative interference. It is generally a local and primary lesion and is characterized by the formation of tumor masses composed of fibrous and tuberculous granulation tissue in the walls of the bowel. Primarily

there is no involvement of the mucous membrane, but on account of the narrowing of the gut the irritation caused by the passage of feces may produce ulceration.

The symptoms are slight, constipation and diarrhoea sometimes alternating. Later, the symptoms are those of gradually increasing intestinal obstruction. The differential diagnosis is between sarcoma, carcinoma, syphilis, and chronic appendicitis with adhesions.

The treatment is purely surgical. If possible the entire growth should be removed, but failing in this, a short-circuiting operation should be performed to relieve the obstruction.

Two cases are reported with successful operations.

**Hirschman, L. J.: The Pathologic Sigmoid Colon and Its Surgery.** *Tr. Am. Proctol. Soc.*, Atlantic City, 1914, June. By Surg., Gynec. & Obst.

Studies with the fluoroscope and the sigmoidoscope have shown that true prolapse and invagination of the sigmoid colon into the rectum is not an uncommon condition. The author advocates shortening the mesentery of the sigmoid by attaching the mesentery of the invaginated or prolapsed portion to the root of the mesentery of the descending colon.

In a number of cases of obstruction to normal defecation, this obstruction will be found in women who give a history of a disturbed puerperium. Radiographic studies of these patients who give the history of chronic obstipation, accompanied by pain and marked tenderness in the left lower abdominal quadrant and the region of the womb and broad ligaments, more often the left, show the presence of adhesions which angulate, displace, or bind down the sigmoid. The cure of this condition involves the relieving of the adhesions and the covering of raw areas with omental, epiploic, or mesenteric grafts, or the excision or short-circuiting of the sigmoid. Another class of adhesions of the sigmoid seriously obstructing defecation is caused by adhesions to the abdominal wound following laparotomy.

Hypertrophy or redundancy of the sigmoid colon is another pathological condition which has not infrequently been met with. When the walls of the bowel contain a large proportion of unyielding fibrous tissue, short-circuiting and excision are insufficient, and excision is indicated.

In malignant growths of the sigmoid colon, excision with immediate anastomosis is the ideal indication.

When a case is inoperable it is the author's practice to make the colostomy in the median line. This is done for the following reasons: First, the median incision is the best for exploratory purposes. Second, one has the choice of any part of the colon in the making of the colostomy. Third, just as good adhesion and union results with no more liability to hernia, as in the side. Fourth, the patient is better able to cleanse and dress the colostomy in the



median line. Fifth, it takes the colostomy opening away from the neighborhood of the iliac crests, and allows better fitting of retention apparatus and colostomy shields. Sixth, control of a median colostomy is as satisfactory as the lateral.

The author has found no difficulty in securing colostomy control by using a small rubber catheter in the mesenteric opening beneath the spur and encircling the upper limb of the colostomy with this catheter, drawing it just snug enough that the mucous surfaces are in apposition. The catheter is held in this position by a seraphine snap and is released by the patient when he wishes to defecate or expel flatus.

**Martin, C. F.: Retrorectal Infections.** *Tr. Am. Proctol. Soc.*, Atlantic City, 1914, June.

By Surg., Gynec. & Obst.

Martin reviews the histories of sixty-seven cases. In addition to the infection of the retrorectal space many of the cases also had involved the pelvirectal and ischiorectal spaces. Some of the more chronic cases were complicated with stricture of the rectum and multiple fistulæ.

Eighty-five per cent of the infections occurred in males. External traumatism was not a factor in this series of cases. The author holds that most of these infections originate from internal traumatism, associated with some condition which lowers the resistance of the individual to pyogenic infection.

Pulmonary tuberculosis appears to be the most constant factor in lowering the resistance. Twenty-one per cent died from tuberculosis at varying periods, either after examination or operation.

Forty-three per cent of the cases are noted as having pulmonary tuberculosis.

Of the 55 cases operated upon, 33 were cured. These present 60 per cent of the operative cases, or nearly 50 per cent of the total number examined.

In nearly half of the cases the original abscesses had opened posteriorly, either between the sphincters or at the anorectal line. Pain was not a prominent symptom.

The methods of incision applicable to the various complicating conditions are briefly outlined. The author lays great stress upon the seriousness of these infections, and upon the necessity of the prolonged watchful after-treatment.

While the prognosis as to both complete recovery of the local condition and the general health, as well as to the preservation of the sphincter control, should be guarded, careful after-treatment and prolonged observation will result in saving a large proportion of these really serious cases.

**Thorbecke, W.: Familial Occurrence of Intestinal Polyps** (Über das familiäre Auftreten von Darm-polyphen). *Deutsche Ztschr. f. Chir.*, 1914, cxxvi, 553. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author reports three cases in a child, its father, and the father's brother. In about 50 per

cent of the cases of polyps there is carcinomatous degeneration. The proportion of polyposis in men and women is 100:67; 82 per cent occur before 40, the rest after that age. Polyposis with carcinoma is twice as frequent in men as in women. The large intestine is most frequently affected, especially the rectum. The disease generally appears in early childhood, which, together with its occurring in different members of the same family, seems to indicate a congenital predisposition.

The known theories as to the origin of polyps and the development of carcinoma in them is discussed. In the beginning there are symptoms of catarrh of the large intestine; the stools, sooner or later, are mixed with blood and mucus. The diarrhœa and painful tenesmus cause gradual emaciation and death. Sometimes death occurs suddenly from hæmorrhage. When diarrhœa persists the polyps often prolapse; rectal prolapse also occurs.

Exact diagnosis is made by digital examination. Little is to be expected from treatment. Irrigation with astringents, curettage of the polyps, the formation of an artificial anus, and extirpation of the rectum do not give satisfactory results. The latter is to be recommended only in carcinomatous degeneration. The chief stress is to be laid on abundant nutrition.

HOFFMANN.

**Hill, T. C.: Anal and Rectal Growths of Benign or Doubtful Character.** *Boston M. & S. J.*, 1914, clxx, 977. By Surg., Gynec. & Obst.

The author calls attention to the small number of benign rectal growths, 49 of these as compared with 76 malignant tumors, in his series of 3,000 rectal cases.

The chief interest in rectal tumors lies in the difficulty of diagnosis. Since the two-step operation, whereby a piece of tumor is first removed for microscopic examination, and radical operation performed later, if the tumor proves malignant, is not recommended, an exact diagnosis is essential.

In some regions of the body, where some mutilation or slight deformity need only be considered, the removal of a growth of doubtful nature may be a matter of small import. This is often true with respect to mammary tumors, and statistics are quoted which show that 10 per cent of the complete breast operations, in the hands of competent surgeons, are done on benign cases. The removal of a rectal tumor may result in deformity also, but what is much more important, there may be serious impairment of function. Another reason given for accurate diagnosis is that the operation in malignant cases is very formidable and mutilating with high immediate mortality, 30 to 40 per cent, and with small percentage of authentic cures, 10 to 15 per cent. It is therefore not to be undertaken lightly.

Different cases are described which presented conditions liable to be mistaken for malignancy.

1. Blind internal fistulæ associated with irregular induration, occasionally found along their tracks, may very closely resemble carcinoma.



2. Inflammatory fistulæ in syphilitic patients often present difficulties in diagnosis. Whether syphilis has anything to do with their production is not known, but the employment of antisyphilitic treatment synchronously with operative measures is usually necessary for the cure of such fistulæ.

3. Most of the benign rectal tumors are adenomata or glandular polypi. They are mostly found in children and are the causes of repeated hæmorrhages. They may also be found in adults and here they exhibit a tendency to undergo carcinomatous degeneration. In both instances their removal is imperative. The technique, which is simple, is described.

4. Myoma of the rectum has been observed in the author's practice. The diagnosis of this "pathological curiosity" could only be made from a section.

5. Multiple adenomata are occasionally met with. These are found higher up than the zone of ordinary occurrence of single growths, and the examining finger can often detect two or more. Associated with them is a history of diarrhœa and mucous discharge. This is a rare and serious condition, seldom seen in general practice. It is best treated by the establishment of a cæcostomy or ileostomy, followed by irrigations. Colectomy is not recommended.

General anæsthesia is recommended in the examination, as the character of a tumor is changed after the relaxation produced by the anæsthesia.

C. C. MECHLING.

**Jüngerich, W.: Acetonal Suppositories in the Treatment of Proctitis** (Acetonalzäpfchen bei der Proktitisbehandlung). *Berl. klin. Wchnschr.*, 1914, li, 356.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author discusses the modern treatment of proctitis. Instead of the moist treatment with disinfecting and astringent substances, he now uses a dry insufflation of powder, and has treated several cases successfully with acetonal suppositories. This preparation contains 2 per cent aluminum acetate, as an active disinfectant and astringent, and 10 per cent acetone-chloroform-salicylic ester. The treatment consists in regulating the stools through diet; sitz baths in the evening; small enemata of oil, morning and evening; and then application of the suppository. This has the advantage over the moist treatment that it can be carried out by the patient himself without his work being interrupted.

KÖRBL.

**Miles, W. E.: Two Cases of Total Excision for Complete Procidentia of the Rectum.** *Proc. Roy. Soc. Med.*, 1914, vii, Sect. Proctol., 247.

By Surg., Gynec. & Obst.

The first case was that of a female domestic who had suffered from prolapse of the rectum for seventeen years. She had undergone an operation for the procidentia seventeen years ago and a second

operation three years later, both of which were unsuccessful. During straining, and with every motion of the bowels, the rectum protruded to the extent of five inches. When the protrusion was reduced there was a distinct narrowing of the lumen of the bowel, at a point corresponding to the apex of the procidentia when the bowel was protruded. The anus was relaxed and there was marked atony of the sphincter muscles.

The operation of total excision was performed, after which the patient made a complete and uninterrupted recovery except for recurrent hæmorrhage from an artery in the rectovaginal septum. She recovered fæcal control.

The second patient had had an operation seven years before, followed by recurrence of the prolapse. The operation of total extirpation effected a cure.

The two cases are illustrative of the failure of a less radical operation to effect a cure in complete procidentia of the rectum. In both cases the apex of the procidentia corresponded to the rectosigmoidal junction, and therefore the whole of the rectum constituted the external layer of the procidentia. In both cases a peritoneal pouch containing coils of small intestine existed. At the operation the entire rectum, together with a corresponding length of the pelvic colon, about nine inches in all, was removed, and the proximal end of the pelvic colon was sutured to the skin of the anus. The external sphincter and levator ani muscles had been left.

In the author's experience with eleven cases, the operation is a safe procedure, as all of his cases recovered. He states that in cases of incomplete procidentia, before the protrusion is sufficiently extensive to contain an anterior peritoneal pouch, he had excellent results from an operation in which the posterior rectal wall had been firmly fixed to the anterior surface of the sacrum. He states that, in his opinion, the latter method is not applicable because of the anterior peritoneal pouch, which would tend to produce protrusion anteriorly.

The operation of rectopexy as taught by Ball was considered by the author, but his success with the operation of total excision leads him to prefer it to all others.

C. C. MECHLING.

## LIVER, PANCREAS, AND SPLEEN

**Meudie, A.: Modern Surgical Treatment of Non-Suppurating Hydatid Cysts of the Liver** (Traitement chirurgical modernes des kysteshydriques non suppures du foie). *Ann. clin. chir. du P. Delbet*, 1914.

By Journal de Chirurgie.

The method of choice in the treatment of non-suppurating hydatid cysts of the liver is incision followed by extraction of the mother vesicle, and suture of the cyst with reduction without drainage. The author reports 101 cases. The sutures do not produce hæmorrhage or cholerrhagia, as they have been said to do. Cholerrhagia was never observed in 30 cases, and hæmorrhage in only one where Delbet's technique was not carefully followed.



In these 30 cases there was healing by first intention without secondary effusion in 93 per cent.

The only contra-indications are if the site of the cyst is deep down or if there is total calcification of the walls. If the contents of the cyst permit it, Delbet injects 1 per cent formalin before the operation, and when this is done intracystic effusion is less frequently observed. He does not believe in fixation of the cyst to the abdominal wall, as this seems to favor effusion. After fixation there was effusion in 37 per cent of the cases, and in only 15 per cent of the cases without fixation. When the cyst does not collapse spontaneously Delbet aspirates the air.

Marsupialization should be performed only in cysts that are suppurating or totally calcified; extirpation only in non-adherent cysts with pedicles; enucleation should not be practiced at all on account of hæmorrhage and cholerrhagia. In reduction without suture there are apt to be peritoneal adhesions, or bloody or biliary exudate. More or less extensive resection of the cyst involves the danger of hæmorrhage and is useless. Reduction without drainage is superior to other methods in that it is more efficacious, less harmful, and can be performed in a shorter time. GASTON PICOT.

**Ertaud: Rupture of the Liver by Abdominal Contusion; Suture of the Liver; Recovery** (Eclatement du foie par contusion abdominale; suture du foie; guérison). *Bull. et mém. Soc. de chir. de Par.*, 1914, xl, 506. By Journal de Chirurgie.

A young man of 17 was crushed under an elevator. The site of the superficial injuries and the signs of internal hæmorrhage led to a diagnosis of probable rupture of the liver. A median supra-umbilical incision with a transverse branch to the right laid bare the liver, and a long fissure was found at the free edge of its upper surface. The greater part of it was sutured with coarse catgut, the highest part of it in the convex surface of the liver being inaccessible; drainage was inserted. Recovery was retarded by pulmonary complications.

The author reports two other cases of his own, one from the kick of a horse, the other from crushing of the lower part of the thorax. Operation was delayed until the following day in both cases. Suture was impossible in both and the rupture was tamponed. The first patient died from shock, the other recovered after a long time.

In such cases absolute diagnosis is impossible, but it may be made with a great degree of accuracy from the site of the external injuries and the signs of internal hæmorrhage, beginning early and growing progressively worse. The only treatment is operation. The results are not brilliant, for in 188 operations there have been 105 deaths, or a mortality of 56 per cent. This mortality is due, not only to the severity of the operation, but to the poor conditions under which it has generally been performed. In cases that were sutured the mortality has been only 37 per cent, as contrasted with 57 in cases of

tamponing. To make suture possible there must be a very free incision. Sprengel's incision is best.

CUNÉO called attention to the fact that the operator should be on the left of the patient. The patient should be turned toward the left by the lateral inclination of the table and by a cushion under the dorsal region. This position of the patient was recommended by Rio Branco in his thesis and is easily obtained by means of an appliance which he invented. J. DUMONT.

**Gibbon, J. H.: The Treatment of Gall-Bladder Infections; with Report of Twenty-Six Recent Cases.** *J. Am. M. Ass.*, 1914, lxii, 1880.

By Surg., Gynec. & Obst.

The author considers the indications for operative interference in gall-bladder infections, and presents some of the pathological complications which arise when these indications are not heeded. Twenty-six cases are used as a basis, but are not specifically reported as such.

If the diagnosis of gall-bladder infection is warranted, early operation also should be advised unless there is some definite contra-indication. The idea of medicinal treatment to dispose of stones is strongly condemned. The longer operation is delayed the greater the risk of complications arising, such as blocking of the cystic duct, infection of the smaller bile passages, ulceration into the duodenum, acute or chronic pancreatitis, and beginning cancer.

A careful history and abdominal examination are essential to diagnosis of gall-bladder infection. The earliest symptom is a sense of fullness in the upper abdomen, chiefly at night, and without reference to taking food. This coupled with tenderness over the gall-bladder region is practically pathognomonic. Pain in the back or in the right shoulder, and a transient jaundice complete the picture.

The author next discusses the cases in which no stones are found at operation, and he advises the physician to bear in mind that a gall-bladder may give symptoms and yet contain no stones. In this series of 26 cases there were two acute inflammations without stones and three of chronic cholecystitis also without stones.

A brief résumé is given of the series of cases showing the different pathological conditions found at operation, interesting points derived from the histories, and a review of the causes of deaths. The one interesting feature of this latter is that every case dying after operation was deeply jaundiced before.

The author further states that in uncomplicated cases the risk is no greater than in the ordinary abdominal case. Post-operative bleeding can usually be controlled by horse serum and the coagulation time should always be observed.

He concludes by stating that stones are not likely to re-form after they have been completely removed and the gall-passages thoroughly drained for a period of at least two weeks, except in very rare cases.

PHILLIPS M. CHASE.



**Petit, A.: Typhoid Cholecystitis** (Des angio-cholécystites typhiques). *Thèses de doct.*, Par., 1914.  
By Journal de Chirurgie.

This work is a general review of the question. The diagnosis of typhoid cholecystitis during the course of the disease is often very difficult, and there is danger of confusing cholecystitis with appendicitis, or even with the symptoms of the typhoid itself. A diagnostic sign of the greatest importance is the appearance of a sudden elevation of temperature accompanied by nausea and pain, which the patient cannot localize, but which is localized by the surgeon in the region of the gall-bladder.

Jaundice is rare in the course of simple cholecystitis, but the appearance of a swelling below the liver is of considerable value. If the typhoid infection is specially localized in the gall-bladder, angiocholitis is quite frequent. The author reports several cases in which, during the course of an apparently non-typhoid cholecystitis, a typical case of typhoid developed.

He recommends the following treatment: If there is angiocholitis, medical treatment should be tried first. If the symptoms do not yield rapidly, cholecystostomy should be performed if the cystic duct is permeable; if it is not, cholecystectomy with drainage of the biliary passages is the best procedure. When the gall-bladder alone is affected, operation is the only method of treatment that is sure to prevent perforation, if it is performed early. After 36 or 48 hours there is an advantage in waiting and operating after the attack.

Petit prefers cholecystostomy to cholecystectomy as being less dangerous and more effective. Among the cases he describes this unpublished one of Leuret's: A patient of 62 had had hepatic colic for 6 years. He entered the hospital for typhoid fever, with a temperature 38.5° and pain in the region of the gall-bladder. The temperature rose to 40°, and a diagnosis of typhoid and calculous cholecystitis was made. The patient was placed under observation, with ice on the abdomen. The temperature fell, then rose to 40.2° and finally fell to 38°. At this juncture Leuret operated. The gall-bladder was large and adherent. In freeing the adhesions a little pus was discharged. The gall-bladder was removed, the cystic duct ligated, and the region drained. A little bile was discharged for a few days. The patient was discharged completely cured on the fifteenth day. The gall-bladder contained numerous calculi and pus, containing pure cultures of Eberth's bacillus.

GASTON PICOT.

**Grillet, J.: Cholecystectomy during the Attack in Acute Calculous Cholecystitis** (De la cholécystectomie à chaud dans les cholécystites aiguës calculeuses). *Thèses de doct.*, Lyon, 1913.  
By Journal de Chirurgie.

The object of this work is to show the superiority of immediate cholecystectomy in the treatment of acute calculous cholecystitis. The advantages of this radical operation are numerous. It avoids

the dangers of expectant treatment, such as biliary phlegmon, perforation of the gall-bladder, peritonitis, angiocholitis, etc. It offers considerable technical advantages because of the almost complete absence of adhesions. It is more efficacious than cholecystostomy, since the focus of infection is radically removed and the bile drained directly through the cystic duct. As to late results, it prevents fistulae and subhepatic peritonitis.

The following statistics, reported by the author, are in favor of the method:

1. At the Heidelberg clinic, from 1907 to 1910, 62 operations were performed for cholecystitis with the following results: In 43 cases of acute cholecystitis, 39 ectomies with one death, 4 ostomies with three failures; in 14 cases of cholecystitis with angiocholitis, 14 ectomies with 3 deaths; in 5 cases of cholecystitis with diffuse peritonitis, 1 ectomy that was successful and 4 ostomies with three failures.

2. At Poncet's clinic, in 9 cases of cholecystitis, 1 ostomy was performed with recovery after a supplementary operation, and 8 ectomies with recovery in all. Of these 8 cases, 2 were acute cholecystitis, there was one case each of ulcerous, gangrenous, suppurative, and hæmorrhagic cholecystitis and 2 cases of phlegmonous cholecystitis. Grillet insists on the importance of two points in the technique: the cholecystectomy should be subserous and the bile drained for a long time through the stump of the cystic duct. The point which has been urged against the radical operation is the difficulty of treating the later complications if infection reappears. The author thinks that sufficiently prolonged drainage of the cystic duct will generally prevent this.

GASTON PICOT.

**Wiedemann, H.: Experiments in the Technique of Diverting the Bile into Different Sections of the Intestinal Tract; Transplantation of Vater's Papilla** (Experimentelle Beiträge zur Technik der Gallenableitung in verschiedene Abschnitte des Verdauungstraktus. Transplantation der Papilla Vateri). *Beitr. z. klin. Chir.*, 1914, lxxxix, 599.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author in order to study digestion when the secretion of the gall is disturbed by the emptying of the bile into the stomach or the small or large intestine, performed anastomosis of the gall-bladder with different segments of the intestine in dogs. He found that the results of the operation became worse the deeper down in the intestine the anastomosis was made. No dogs died on whom cholecystogastrostomy was performed, and cholecystenterostomy was well borne when an anastomosis was made at the same time between the afferent and efferent parts of the segment of intestine involved. But all the dogs on whom cholecystocolostomy was performed died, either of perforative peritonitis or of acute cholecystitis as a result of infection from the large intestine. In order to avoid these unfavorable results the part of the duodenum into which the



common duct opens was transplanted into the colon, the papilla also being transplanted.

The technique of the operation is described. Of three dogs on whom the operation was performed two died as a result of technical errors in the operation, and one lived. He thinks that this transplantation of the ampulla marks a great advance in experimental surgery. In the previous anastomoses between the gall-bladder and the stomach or intestine the excretion of bile was disturbed, since the bile must be discharged according to purely mechanical laws, while the physiological impulse to the secretion of bile, effect of albumoses, hydrochloric acid, etc., was done away with. By the transplantation of a piece of the duodenal wall containing the common duct and the ampulla, the physiological impulse was preserved, and the discharge of the bile simply transferred to a different part of the intestine. This also lessened the danger of infection of the bile passages, as the sphincter of the common duct was preserved. **UNTER ECKER.**

**Deaver, J. B. and Pfeiffer, D. B.: Chronic Pancreatitis.** *Ann. Surg., Phila.*, 1914, lix, 841.

By Surg., Gynec. & Obst.

"Complete removal of the pancreas is homicidal, partial excision is difficult and but rarely indicated, and direct drainage can be accomplished only in very imperfect fashion at best."

Difficulties in dealing with chronic pancreatitis are increased by the fact that no definite laboratory test nor syndrome of signs and symptoms identify it. Hope lies in prompt action in early lesions to prevent development of damage to the parenchyma of an essential organ which can never be repaired.

Several facts have been established: (1) A considerable number of pancreatic inflammations are associated with and are secondary to inflammatory lesions of the alimentary tract, particularly the gall-bladder and duodenum. (2) The head is more often involved than the body and tail of the pancreas. This is probably due to the close association of the lymphatics of the gall-bladder, liver, and duodenum, with those of the head of the pancreas. Deaver and Pfeiffer have shown that pancreatic infection corresponds with lymphatic distribution and not with the distribution of the duct of the pancreas.

Pancreatic lymphangitis occurs with cholecystitis, with or without stones. The effect of the knowledge of lymphatic dissemination of infection has diminished the author's faith in simple drainage of the gall-bladder, or ducts, as a "cure-all" for biliary and pancreatic infection. Recurrences are more common after drainage for simple cholecystitis than calculus disease of gall-bladder or ducts.

We have come to believe that the field of cholecystectomy should be widened and that all gall-bladders should be removed that show evidence of chronic infection, independent of obstruction, and, particularly so, if the pancreas is involved. Drainage of the common duct should never be omitted in connection with cholecystectomy. **ISIDORE COHN.**

**Walter-Sallis, J.: Non-Biliary Pancreatitis** (Les pancreatites non biliaires). *Rev. de chir.*, 1914, xlix, 446. By Journal de Chirurgie.

Non-biliary pancreatitis is rarer than the biliary form. Walter-Sallis has collected 50 cases among 250 cases of pancreatitis, or 20 per cent; 34 were women and 16 men, and it was found at all ages from 3 to 83 years. The bacteriology is variable; it may be caused by typhoid, malaria, measles, scarlet fever, pneumonia, or mumps. Pregnancy is an important etiological factor. Traumatism, annular pancreas, and supernumerary pancreas may be responsible. Infection may be through the blood or lymph-stream or may ascend through the duct. There is a local reaction of the pancreatic tissue which may be perilobular, intralobular, or acinous. In the interlobular form the islands of Langerhans may be spared, but in the intralobular sclerosis the internal secretion of the pancreas is affected and pancreatic diabetes results. The development is slow and insidious. There is a mild diffuse pain with a feeling of fullness and weight and occasionally a crisis of epigastric pain 2 or 3 hours after a meal. A crisis of pain may mark the beginning of the pancreatitis. Fever, nausea, and vomiting accompany the attack; which is followed by fatigue and prostration. The appetite decreases and the attacks gradually come closer together; sometimes there is distention of the epigastrium and tension of the muscles of the abdomen; and sometimes there is a transverse tumor, immovable and not clearly defined. The disease becomes progressively worse and death takes place from profound cachexia. Secondary pancreatitis may follow an ulcer of the stomach or duodenum. In non-biliary pancreatitis the pancreas keeps its normal volume and is not so hard as in biliary pancreatitis; intrapancreatic adenitis is rare; digestive troubles are much less frequent, but icterus is rare. Sometimes there is diarrhoea and hæmophilia. Pancreatic insufficiency may be demonstrated by examination of the urine and fæces. It may affect the gall-passages and liver secondarily. Cancer sometimes complicates chronic pancreatitis.

The treatment is surgical. Exploratory coeliotomy is sometimes sufficient to cure early cases (18 cases with 18 recoveries). Retropancreatic drainage has some effect; it may be combined with pancreatotomy in case of strangulation of the common bile-duct. There are many objections to partial pancreatectomy and anterior choledochotomy. Gastro-enterostomy is indicated in annular pancreas (8 cases). **J. OKINCZYC.**

**Stasoff, B.: Surgery of Stab Wounds of the Spleen, with Special Reference to Transplantation of Omentum** (Beiträge zur Chirurgie der Milzstichverletzungen unter besonderer Berücksichtigung der isolierten Netztransplantation). *Beitr. z. klin. Chir.*, 1914, lxxxix, 621. By Journal de Chirurgie.

The author reports 9 cases of stab wounds of the spleen observed from 1901 to 1913, and discusses



such injuries in general. Solitary stab wounds of the spleen are rare; in the great majority of cases they take place through the thorax, rarely through the abdomen, and the pleura and diaphragm are usually injured. The spleen is most frequently injured when the external wound is in the region of the eighth, ninth, or tenth intercostal space.

The diagnosis is difficult, because the general as well as the local symptoms may be caused by injuries of other abdominal organs, and by the injuries to the pleura, diaphragm, and even lung that frequently accompany them. The prognosis in operative treatment is good, the mortality being 18.5 per cent, when there are also injuries of the pleura and diaphragm but not of other abdominal organs. It is unfavorable in conservative treatment. The most frequent treatment is suture, then tamponing, and, lastly, splenectomy.

In stab wounds of the spleen and small ruptures of the spleen the author recommends a combination of suture with transplantation of omentum by

Loewy's method, which gave good results in three of his nine cases. Tamponade is not so good on account of the impossibility of completely closing the wound and the danger of infection of the fistula and of secondary hæmorrhage. There are three possible methods of operation for injuries of the spleen: laparotomy, thoracotomy, that is, thoracotomy and laparotomy and transpleural laparotomy. Transpleural laparotomy is the usual method, as it is simply a continuation of the external wound. In injuries from in front, or where there are symptoms of intra-abdominal hæmorrhage, or there is a suspicion of injury to other organs of the left hypochondrium, thoracotomy should be performed with Zeidler-Krjuhoff's incision, which consists of section of the eighth, ninth, and tenth costal cartilages, incision of the diaphragm, and a continuation downward along the external border of the left rectus muscle. It is to be preferred to others because it is quicker and easier to make and gives such a large field for operation. OEHLER.

## SURGERY OF THE EXTREMITIES

### DISEASES OF THE BONES, JOINTS, MUSCLES, TENDONS. CONDITIONS COMMONLY FOUND IN THE EXTREMITIES

**Chalaby, F.: Primary Osteomyelitis of the Patella** (L'ostéomyélite primitive de la rotule). *Thèses de doct.*, Toulouse, 1914. By *Journal de Chirurgie*.

The author describes a case of chronic osteomyelitis of the patella with fistulæ and sequestra shown by radiography. He reviews 22 cases of this rare disease, which is generally observed between the ages of 7 and 10 in the male sex. Traumatism, fatigue, and cold are contributing causes — bacterial invasion of the patella the immediate cause.

One case of sporotrichosis of the patella is described by MOURE and CARAVAN. The osteomyelitis may be acute or chronic, the latter being less frequent. It may also be classified as partial or total. In the former there is a little cavity filled with pus and a sequestrum on the anterior surface of the bone; in the latter the whole patella is necrotic and forms a large sequestrum. After partial or total removal of the patella it is generally regenerated from the posterior cartilage in children under fifteen; this is exceptional in the adult, in whom the patella is removed by the subperiosteal method.

The clinical symptoms common to the different forms are malformation of the anterior region of the knee, pain localized at one point in the patella, integrity of the knee-joint, and the position of the lower limb in extension.

There are two complications possible: one, suppurative peri-arthritis of the knee is comparatively benign; the other, py-arthritis, is very severe. In the acute form the diagnosis is easy only when there

are no intra- or extra-articular complications. Differential diagnosis must be made from purulent arthritis of the knee, osteomyelitis of the lower end of the femur, and sometimes from acute rheumatic arthritis. If there are abscesses or fistulæ it may be difficult to make a distinction from peri-arthritis, and acute or suppurative hygroma, especially as these two affections may coexist with it.

The chronic forms must be distinguished from osteitis caused by syphilis, tuberculosis, or sporotrichosis; radiography will be of great value in this diagnosis.

The only curative treatment is to extirpate the diseased bone. In the partial forms simple curettage of the focus of suppuration may suffice; in the total forms the patella should be removed subperiosteally by Ducuing's method. Early mobilization and massage are indispensable supplements to surgical treatment. The results are good; better of course in case of simple curettage, but satisfactory also, with regard to function, in case of total removal of the bone. L. CAPETTE.

**McClure, C. R.: Sacro-Iliac Traumatism.** *North-west Med.*, 1914, vi, 155. By *Surg., Gynec. & Obst.*

The sacro-iliac joints are true joints, but have been little understood until recently, and the author discusses injuries of these joints only. There is a rather careful anatomical description. The injuries are classified as (1) wrenches or sprains, (2) true luxation, (3) relaxation or looseness.

Injuries of the first type are caused by slight blows, jerks, or pulls. The pain, which comes on acutely, is located in the back, and is frequently called lumbago. Movements in the back are decidedly limited, and the pain often extends down the thigh



and leg. This trouble has long been mistaken for sciatica. Adhesive strapping of the back will afford relief and effect a cure in a few weeks.

True luxation is rare and is only caused by decided force. The accompanying pain is most severe, the patient being completely incapacitated, movements of the trunk, abdomen, and thighs being almost impossible. In the examination, X-ray is of much value; rectal examination is also of great aid.

In the greatest number of sacro-iliac injuries the joints are relaxed and loose. They are also recognized less often, since they are less acute and the symptoms are more lasting. They are also more difficult to treat. The patients have weak backs, sit in a lounging position, stand awkwardly, and are obliged to help themselves from a sitting posture by the aid of their arms. The author says that Goldthwait thinks this condition is often a forerunner of abdominal ptosis.

Post-operative backache is due to a sagging of the sacrum while the muscles are relaxed, the ligaments thus becoming stretched. The remedy is support under the hollow of the back, before and after operation. Long continued positions of sitting, standing, stooping, etc., result in strain of ligaments, and loosened joints follow. The diagnosis is as follows: The normal lumbar curve is flattened; the upper end of the sacrum is prominent; pain is always present at the joint or near it. There is pain down the course of the sciatic nerve due to pressure on sacral plexus, which crosses in front of the joints; pressure along the nerve is painless. In luxations, a step-off is felt at the joint by means of rectal examination. Stooping with the legs and thighs straight is painful. Flexion of the thigh, with the leg extended, causes pain. Sciatica and lumbago have so long been the diagnosis and patients have suffered so much, besides having to take quantities of medicine, that all should familiarize themselves with these conditions.

The prognosis in acute sprains is good. Some of the chronic relaxed cases resist treatment for a long time. Diagonal adhesive strappings across the sacrum from one iliac crest to the opposite buttock, the straps reinforced by circular straps, is one of the best ways to hold the joint quiet. Belts made of webbing sometimes give relief, while some cases must be treated with the plaster jacket. Luxations must be manipulated back into position, an anæsthetic often being necessary; operative procedure is sometimes required to bring about ankylosis of the joint, in order to afford permanent relief.

C. A. STONE.

**Menne: The Light and Irradiation Treatment of Surgical Tuberculosis** (Die Licht und Strahlenbehandlung der chirurgischen Tuberkulose). *Arch. f. physikal. Med. u. med. Technik*, 1914, viii, 7.

By *Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.*

After a short review of our knowledge of, and the theories in regard to, the effect of sunlight and the reactions produced by it in the organism, the author

points out that the results of heliotherapy in surgical tuberculosis are excellent, even in the lowlands and at moderate altitudes, and recommends, as a supplement, artificial high altitude, sunlight, and the carbon arc light. Röntgen treatment also is made more effective by desensitization of the skin by anæmia, by improving the technique of deep irradiation, and by sensitizing the diseased focus by diathermia, tuberculin, or injection of sensitizing substances, such as eosin and quinine. Treatment with radio-active substances is a valuable supplement to röntgen treatment. Isolated foci of tuberculosis that are capable of radical removal should be operated upon.

HARRASS.

**Chlumsky, V.: Treatment of Surgical Tuberculosis and Infected Wounds with Mesbé** (Über Mesbébehandlung bei chirurgischer Tuberkulose und bei infizierten Wunden). *Zentralbl. f. Chir.*, 1914, xli, 369. By *Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.*

The author disputes the conclusions of Vulpis in regard to Mesbé, as he does not think they are justified. For over a year he has used this remedy and has treated almost 1,000 cases with it. He used it in the form of a 20 per cent salve or a fluid for injection, 20 parts Mesbé to 100 parts glycerine. Tuberculous fistulæ and wounds are said to have healed quicker under this treatment than any other; the results were the best from the injection of the glycerine mixture into cold abscesses. The author claims that Mesbé is not a specific, and that it is not only equal to, but superior to, iodoform in the treatment of cold abscesses. It was well borne; high temperatures were almost never observed after the injections.

BRANDES.

**Vinay: Treatment of Tubercular Cystitis by Injection of Lactic Bacilli** (Traitement des cystites tuberculeuses par les injections des bacilles lactiques). *Bull. et mém. Soc. de chir. de Par.*, 1914, xl, 655. By *Journal de Chirurgie.*

MARION reports the results which this treatment has given in his service in the hands of his interne, Vinay, who had the idea of substituting the injection of cultures of Bulgarian bacilli in skimmed milk in the place of lactic acid, the therapeutic action of which on certain forms of external tuberculosis is well known.

Vinay's technique is as follows: Bulgarian bacilli furnished by the Pasteur Institute are implanted in tubes of milk sterilized at 120°. These tubes are left in the incubator 12 hours at 37°. Ten to 15 ccm. of this preparation were injected in each patient, the injections being repeated three times per week.

In five cases of tubercular cystitis in which this treatment was used there was marked improvement in all the symptoms, even when the patients still had tubercular kidneys. In one patient the result may be considered a recovery. Marion avers that the effect of the injections of bacilli is to prolong the action of the lactic acid formed, for examination



of the urine some days after the injections showed that bacilli were still present.

J. DUMONT.

**Gilmour, A.: Hypertrophic Pulmonary Osteo-Arthropathy — Marie's Disease.** *Edinb. M. J.*, 1914, xii, 527. By Surg., Gynec. & Obst.

The author reports this case because it is rare to find it in so young a patient.

A boy 9 years old had had, when 16 months of age, a toe amputated at the metatarsal-phalangeal joint for disease; at 5 years had an excision of the right knee for tuberculosis; developed a marked dorsal kyphosis shortly afterward; and at 7 years had swellings of the wrist and fingers, and, a little later, swellings of the ankle and toes.

He describes a hard bony swelling beginning at the lower third of the radius and ulna, increasing toward the wrist; a thickening of metacarpal bones; a marked clubbing of the terminal phalanges of the hands which was confined to the soft tissues; and long curved nails. The lower extremities showed similar symptoms.

He gives the theories of Marie and Bamberger as to the causation of the disease and the finding of Thorburn and Alexander of analyzed cases, and concludes by saying that hypertrophic pulmonary osteo-arthropathy is to be found frequently associated with diseases in which there is pus formation or breaking down of tissues with the retention of the secretion, and it would appear as if the condition was produced by a chronic toxæmia, usually bacterial, but, occasionally, that of altered body metabolism.

JAMES O. WALLACE.

**Wolkowitsch, W. M.: Spontaneous Gangrene of the Lower Extremity, and Its Relation to Sclerosis of the Vessels** (Zur Frage der spontanen Gangrän der unteren Extremitäten und ihrer Beziehung zur Gefässsklerose). *Prakt. vrach*, 1914, xiii, 91. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author reviews in condensed form the contents of his doctor's dissertation and tries to demonstrate by means of 45 cases, 35 of which he gave a detailed pathological anatomical examination, that the emboli, thrombi, and tissue proliferations that cause spontaneous gangrene find a favorable soil in sclerosis of the vessels. The preponderance of spontaneous gangrene in the lower extremities is explained by the more unfavorable mechanical conditions, for the vessels of the leg are under the pressure of a blood column almost equal to the length of the man; they are also compressed and extended by the flexion and extension of the knee, which makes great demands on their elasticity.

The place of choice for occlusion of the vessels is at the bifurcation of the popliteal, for here two vessels of equal size, the posterior tibial and the peroneal, divide at an acute angle, which forms a crest directly in the middle of the blood stream. The solid particles such as blood-cells, clots of fibrin, and clumps of bacteria are carried to the center of the stream; they rebound from this crest

and may injure the wall of the vessel. This easily leads to sclerosis, which in turn causes occlusion of the vessel, either from thrombus formation or from proliferation of connective tissue. The occurrence of gangrene depends on how soon complete occlusion takes place, and whether collateral blood passages have been established.

KOENIG.

**Lapointe, A.: Rupture of the Articular Portion of the Long Tendon of the Biceps** (Rupture du tendon du long biceps brachial dans sa portion articulaire). *Bull. et mém. Soc. de chir. de Par.*, 1914, xl, 630. By Journal de Chirurgie.

Lapointe observed this lesion in a workman of 34 who had made a violent effort to hold a sack of cement, weighing 50 kg., which he was carrying on his head. He felt a sudden severe pain in the upper part of his left arm and could not continue his work. After that he had had persistent pain in the arm and shoulder, increased by any movement, especially flexion of the forearm, and a decrease in muscular power which made it impossible for him to work. Regular massage did not bring about any improvement. The arm was elongated and on comparison with the left arm there was seen to be a projection of the external part of the biceps and it was lowered toward the elbow. The difference was about 5 cm. Between this projection and the lower part of the deltoid there was an abnormal depression. On flexion the internal part of the biceps contracted, but the external part projected still more. A diagnosis was made of rupture of the long tendon of the biceps at its union with the muscle. This diagnosis was confirmed by operation which showed that the rupture was intra-articular. Lapointe did not think it necessary to open the joint to find the proximal end. After having shortened the distal end a few centimeters he fixed it with four No. 2 chromic catgut sutures to the edges of a little capsular buttonhole between the two tuberosities. Healing was by first intention. Five months after the operation the biceps is normal as to position, form, and strength. The patient is performing his work again.

Intra-articular rupture of the long tendon of the biceps is relatively frequent, though it has attracted little attention. Of 13 cases of rupture collected from the literature 11 were intra-articular. In 8 cases the rupture was treated by anterior fixation near the articulation, and in all except one case the results were satisfactory. One interesting point is the relation of rupture to dry arthritis of the shoulder-joint. Ledderhose thinks the arthritis is the cause of the rupture; in cases that are apparently traumatic the tendon has already been altered by disease. Lapointe thinks this is an exaggeration. His patient was a vigorous man, 34 years old, with no signs of arthritis, and the ruptured tendon appeared perfectly normal; therefore, he believes that there is such a thing as true traumatic rupture.

SAVARIAUD has had two cases of rupture of the tendon of the biceps. One was a rupture of the



lower tendon common to the two parts of the biceps. He did not perform any operation; and the patient, who was a vigorous man, regained normal function. The second case was that of a workman who ruptured the tendon of the long head. He complained of loss of power. Operation showed the tendon very much elongated rather than ruptured. He folded the tendon in the manner of an accordion and fixed it to the neighboring parts. The result was good.

SOULIGOUX operated on a typical case of rupture of the tendon of the biceps in a vigorous man of 32 who had made a violent effort in unloading pianos. As he did not wish to open the capsule he fixed the tendon to the coracobrachialis. He made a hole in the latter muscle, passed the ruptured tendon through it from behind forward, carried it around the muscle, and passed it a second time through the orifice; then he sutured it to the tendinous portion of the muscle near the coracoid process. Recovery was uneventful and the functional result excellent.

J. DUMONT.

**Gassmann, T.: Study of Rickets** (Beitrag zur Erforschung der Rachitis). *Schweiz. Vrtljhrschr. f. Zahnk.*, 1914, xxiii, 144.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author found by comparative analytical chemical experiments that the proportion of calcium, phosphates, carbonates, and water in the rachitic bone is the same as in the normal, but the former contains 6 per cent less bone substance than normal, according to Werner's formula. The appearance of the disease is caused by disturbances in bone production, probably due to the increased magnesium content of the diseased bone, as our teeth, which are less resistant than those of prehistoric man, contain considerably more magnesium.

VON KHAUTZ.

**Brandes, M.: Experimental Study of the Time of Appearance of Bone Atrophy Caused by Disuse** (Experimentelle Untersuchungen über den zeitlichen Eintritt der durch Inaktivität bedingten Knochenatrophie). *Fortschr. a. d. Geb. d. Röntgenstr.*, 1914, xxi, 551.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author used the os calcis of the rabbit to study bone atrophy. He cut the Achilles tendon and resected a piece. After a week there was marked atrophy, which involved both the spongy and compact bone, destroyed the outline of the spongy bone, and reduced the cortex to a layer as thin as paper. The tibia and the anterior bones of the ankle were involved also. Even where the function was only partially destroyed (plaster cast), atrophy began very early, and the greater the degree of inactivity of the bone the earlier and more intense the atrophy. From his experiments the author believes that there is no difference between acute necrotic atrophy of the bone and atrophy from disuse. The acute and frequently extreme degrees of atrophy observed in inflammatory conditions and joint diseases are to be attributed to the complete inactivity of the bone.

FRANGENHEIM.

**Katase, A.: Experimental Calcification in Normal Animals** (Experimentelle Verkalkung am gesunden Tiere). *Beitr. z. path. Anat. u. z. allg. Path.*, 1914, lvii, 516. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author injected guinea pigs and especially rabbits with different quantities of calcium salts, subcutaneously, intraperitoneally, and intravenously, and after varying periods of time, sometimes as long as 125 days, examined the different organs microscopically for depositions of calcium. He found that in this way calcification could be produced in many different organs, when there had been no previous abnormality of the tissues, and that the degree of calcification depended on the concentration and the quantity of calcium injected at once, not on the number of injections or the entire amount given.

It was found further that there was a certain relation between the physiological calcium content of the different organs and the frequency and intensity of the artificial calcification produced in them, and that organs with a low physiological calcium content were especially disposed to depositions of calcium. The kidneys and intestine excreted the calcium, especially the large intestine, but it was also excreted by the lungs in the form of small granules with the bronchial mucus. It was found that elastic fibers and connective tissue were especially predisposed to calcification.

The author purposes to devote further study to the results in human pathology of these discoveries, especially the therapeutic effect of calcium salts in tuberculosis.

OSKAR MEYER.

**Frenkel-Tissot, H. C.: Traumatic Disturbances in Nutrition of the Semilunar Bone of the Hand** (Beiträge zur Frage der traumatischen Ernährungsstörung des Os lunatum manus). *Fortschr. a. d. Geb. d. Röntgenstr.*, 1914, xxi, 536.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author discusses the post-traumatic changes in the scaphoid and semilunar bones of the hand, first described by Preiser several years ago and later observed by Hirsch, Pforringer, Wollenberg, Kienböck, and others. He reports two cases of such a disease of the semilunar observed by him in the Zürich surgical clinic, one of which was operated on.

One of the cases was in a 25-year-old maid, the other a 31-year-old cabinet-maker, who had had a trauma of the hand. After four and one-half years the symptoms had increased to such an extent that the function of the hand was seriously interfered with. The semilunar and cuneiform were removed by operation. The examination showed irregular contour and structure caused by irregular deposition of lamellæ; abnormally dark places caused by thickening of the lamellæ in places; and abnormally clear spots, the result of the deposition of fibrin and the formation of connective tissue.

These two cases correspond in all details to typical cases of Kienböck's traumatic malacia of the semilunar bone. The conclusions are as follows:



1. That these two cases are typical cases of traumatic disease of the semilunar (Kienböck's traumatic malacia; Preiser's traumatic disturbance of nutrition).

2. The cases are to be classified with the 16 described by Kienböck on account of (a) the course of the disease, which in one case was shown by the history to be due to trauma, and in the other there was probably a trauma unknown to the patient; (b) the clinical picture, which consisted chiefly in limitation of the movements of the wrist-joint, pain on attempts at motion and in certain pain-points in the region of the semilunar; (c) the radiological picture, which showed abnormal clear spots, thickenings, flattening, and decrease in size of the bone; (d) the microscopical findings, which indicate two fractures of the bone occurring at different times, and make it probable that a Kienböck's secondary pressure-fracture occurred in a bone that was primarily otherwise diseased.

3. The theory, first set forth by Preiser in regard to the scaphoid and later extended by Kienböck to the semilunar, that there is a primary traumatic disturbance in nutrition by rupture of the ligaments and vessels, followed by porosis and secondary fracture, is verified by the clinical and radiological symptomatology of the preceding cases of bone disease.

4. There is a certain parallelism, so far as traumatic disturbance of nutrition is concerned, between this disease of the semilunar and the so-called Köhler's disease of the scaphoid of the foot.

BRANDES.

**Dickson, F. D. and Willard, D. P.: The Results of Joint Tuberculosis, in a Series of Two Hundred Cases, Which Have Been under Observation for Five or More Years.** *Penn. M. J.*, 1914, xvii, 724. By Surg., Gynec. & Obst.

Dickson and Willard report the results in 200 cases of joint tuberculosis which had been under observation for five or more years. The three main points of their investigations were the percentage of total cures, a comparison of the results obtained by the different types of treatment, and the value of the early beginning of treatment after the onset of symptoms.

The treatment in these cases was conservative and consisted of rest in bed for the acute cases with absolute fixation of the diseased joint. The fixation was secured by placing the patient on a Bradford frame with an anterior wire splint molded to the patient's trunk in cases of tuberculosis of the spine, and to the trunk and entire limb in hip and knee cases, the anterior splint being fastened to the frame by webbing straps, or bandages.

The subacute and chronic cases were also treated by fixation; plaster of Paris casts or some type of braces were used, care being taken to secure the best fixation possible by including in the cast or brace the joints above and below the affected one.

The authors urge the importance of bringing the

patient's general health up to the best possible condition by careful feeding, plenty of fresh air and sunlight, and hygienic measures. In hospital cases, the importance of social service workers to keep track of the patients and see that they return at suitable intervals for treatment is emphasized, and much of the improvement in results in this class of cases noted in the last few years is ascribed to this supervision.

The paper is largely statistical and the results presented strongly support the conclusions of the authors, which are as follows:

1. The results of the present combination of conservative and hygienic treatment may be considered as satisfactory.

2. There can be no doubt that the early institution of treatment has a marked beneficial effect on prognosis as to deformity and as to ultimate recovery.

3. Results would indicate that the earlier in life the onset, the more favorable the prognosis.

4. In the acute stages, treatment in bed is the most efficient remedy.

5. Prolonged sinus formation with mixed infection markedly favors the general distribution of the tuberculous process from the localized focus and increases the danger of a fatal termination.

6. The strict enforcement of hygienic measures during the whole course of the disease, and the supervision of the patient after leaving the hospital, are essential points in the treatment of joint tuberculosis.

**Dyas, F. G.: Clinical and Experimental Results of Streptococcic Infections, with Special Reference to Arthritis and Its Treatment.** *Surg., Gynec. & Obst.*, 1914, xviii, 734.

By Surg., Gynec. & Obst.

The purpose of the experiments detailed in this paper is to show the failure of intra-articular injections in streptococcic infections of the joints. The organisms used for the intravenous injection of the experimental animals were recovered from the crypts and cut surfaces of tonsils removed from patients suffering with acute articular rheumatism and endocarditis. The organisms were grown on agar for twenty-four hours and then suspended in salt solution and injected intravenously.

Attempts were first made to protect certain joints by the intra-articular injection of solutions of 2 per cent formalin in glycerine. Next, attempts were made to protect certain joints by the intra-articular injection of a 10 per cent iodoform emulsion. Other joints were injected with 25 per cent solutions of sodium salicylate. All the intra-articular injections were made at the same time as the intravenous inoculation.

The results in all cases were uniformly the same; namely, the injected joints were always more severely attacked by the streptococcus than the joints which had not been injected.

Attempts were then made to protect the entire animal by the intravenous injection of sodium sa-



licylate at the same time that the intravenous inoculation was made. In every instance this gave only temporary relief, joint inflammation and septicæmia occurring.

Two clinical cases are cited showing the method of entrance of the streptococcus into the circulation. The author summarizes as follows:

1. In each animal, multiple suppurative arthritis developed in from 24 to 72 hours, depending upon the amount of streptococci injected, and this occurred regardless of whether attempts had been made to protect certain joints by injections of different solutions, or to protect the entire animal by intravenous injections of sodium salicylate.

2. Swelling and stiffness of the larger joints were noticed after 24 to 48 hours in all cases.

3. At post-mortem, thick, purulent material was found in the joints, which could be scraped away, leaving the synovial membrane dull and lusterless.

4. Destruction of articular surfaces of bones, ligaments, and cartilages may occur, when the animals do not succumb too early to streptococcic septicæmia.

5. Cultures from the heart's blood and from the pus from joints in the animals used gave pure cultures of streptococci.

6. The greatest pathologic changes occurred in those joints in which attempts had been made to protect them by injections of formalin or iodoform.

7. Intravenous or intra-articular injections of sodium salicylate in solutions as strong as 25 per cent have no permanent effect upon streptococcic arthritis.

8. Intra-articular injections of solutions of formalin in glycerine or iodoform emulsion do not protect the joints so treated.

9. Aspiration of the pus and injection of antiseptic solutions after infection of a joint had taken place did not give favorable results in the animals injected intravenously with streptococci.

**Meisenbach, R. O.: Pseudo-Arthrosis Produced by Interposing Sheet Silk and Bayberry Wax.**  
*Am. J. Orth. Surg.*, 1914, xi, No. 4.

By Surg., Gynec. & Obst.

The author classifies ankylosis first as real and second as apparent, and believes that it is a residual outcome of a former disease. In apparent ankylosis a fibrous union may or may not exist between bones, the cartilage may or may not be attached.

The X-ray will show a line of demarcation between the bones, but clinically it is considered an ankylosis.

In real ankylosis, no line of demarcation exists, cartilages are destroyed, and bony union is present; there is atrophy and adhesions of the capsule and surrounding tissues, and the synovial lining has lost its physiological function. His opinion is that prepared animal membrane interposed during operative procedures acts as a post-operative irritant; the reaction is too violent at times, due to liberation into the joint of an excess of chromic acid.

The fascia and muscle-flap interposition have their questionable results. To his mind the interposition of bayberry wax upon the finest silk as a vehicle will prove the least irritant or objectionable, and will result in a greater limit of motion.

A few clinical cases are reported with apparently favorable results.

H. W. MALTBY.

**Brackett, E. G.: The Use of Iodoform Oil in Joints.**  
*Boston M. & S. J.*, 1914, clxx, 873.

By Surg., Gynec. & Obst.

Brackett reports his technique for putting oil or other medicinal agents into joints; also the proper selection of cases for this operation.

He lays especial stress on the technique, emphasizing the fact that the open incision should always be used, because in this way only can a joint be explored and all the adhesions properly freed. Also it gives an opportunity to obtain a specimen for microscopical examination and so help out diagnosis.

The incision in the skin is usually on the inner side of the knee in the form of a blunt ellipse; in the fascia, a smaller ellipse in the opposite direction. A straight and shorter incision is made in the capsule about one-half inch from the border of the patella, in the vertical direction of the limb. A special stitch is used to close the capsule — silk being used throughout. A continuous suture is made, beginning at both ends and including the fibrous portion of the capsule, but not quite through the synovia, thus making the synovia act as a valve. Two mattress sutures are used to close the middle of the incision. The opening of one is placed above the incision and the second smaller one is enclosed by the first and its opening placed below. The syringe is inserted between the threads of the inner mattress, and the stitches are drawn tight. This allows the oil to be put into the joint under tension. It is the tension of the oil in the capsule which the writer believes is of the greatest importance.

Olive oil is used, great care being taken to get a pure neutral, acid-free oil. The French oil is the best. It is sterilized in boiling water for one-half hour. Three and a half to four ounces are used in an adult joint.

Brackett urges especial care in the selection of cases for this operation. He says it is applicable to the cases of capsular involvement of various types of infection, and in stages in which there is no involvement of the articular surfaces. There are two groups:

1. Cases of old infection in which adhesions have been freed and it is desirable to keep the surfaces apart. (The use in these cases is largely mechanical.)

2. Cases of infection: (a) Acute infection — Neisser, etc.; (b) tubercular synovitis — early stage; and (c) chronic arthritis — selected cases.

The procedure is not a substitute for arthroplasty and is not applicable to cases of disease of any origin in which the X-ray shows involvement of the articular surfaces.

In early tubercular cases the most marked and



definite improvement occurs. The injections are repeated several times, at intervals of 8 to 12 weeks. The procedure does not take the place of fixation and rest, but permanent fixation is not advisable.

LLOYD BROWN.

**Herrick, W. P.: Massage and Movements for Certain Affections of Muscles and Ligaments.**

*Am. J. Surg.*, 1914, xxviii, 220.

By Surg., Gynec. & Obst.

Herrick thinks that massage and passive movements are very valuable for such conditions as:

1. Traumatism of ligaments and muscles, under which he considers: (a) contusions; (b) ruptured muscle-fibers; (c) myositis; and (d) sprains.

In contusion, gentle centrifugal stroking dulls sensation and prevents congestion and swelling. He cites a few cases in which this treatment seemingly diminished the time of cure very materially.

In sprains, the effusions in joints react wonderfully to massage, especially of the smaller joints, such as the wrist, ankles, elbow, and phalanges.

2. Disturbed function and nutrition of muscles as in fatigue. Locally, as in weak-foot or flat-foot, and in curvatures.

3. Disturbed innervation of muscles, as in locomotor ataxia and anterior poliomyelitis.

He considers acute infection the only contra-indication. His conclusions are as follows:

1. Increased nutrition and function are essential to the cure of many affections of muscles and ligaments.

2. In obviating deformity, interference with function should be avoided.

3. Massage and movements are important aids to these ends, and should be much more generally used by surgeons.

HENRY J. VAN DEN BERG.

### FRACTURES AND DISLOCATIONS

**Ross, G. G.: Fracture of the Surgical Neck of the Humerus.**

*Penn. M. J.*, 1914, xvii, 695.

By Surg., Gynec. & Obst.

Fractures of the surgical neck of the humerus are practically always the result of external violence and rarely due to muscular action. The fracture is most apt to occur with the elbow fixed and the force exerted directly on the shoulder, or by forcible abduction of the elbow with the shoulder held rigid. The deformity produced is occasionally the result of the force producing the trauma but is most frequently due to muscular action; therefore, a minute knowledge of the anatomy of the shoulder is necessary for a proper understanding of the condition and successful reduction and fixation.

In this fracture the typical deformity is abduction of the upper fragment by the supraspinatus and outward rotation and flexion by the infraspinatus and teres minor. The lower fragment is drawn inward by the latissimus, the pectoralis major, and the teres major, and upward and forward into the axilla by the biceps, coracobrachialis, triceps, and deltoid.

If the fracture is impacted this deformity does not exist to the same extent.

As complications, fracture of the tuberosities occurred in 17.8 per cent of the author's cases, and luxation of the head in 3.57 per cent in one series, and 8.23 per cent in another. The latter is the most troublesome of all complications of the fracture under consideration.

The fracture is most common in middle and old age, but 13.3 per cent of Ross' cases were under 16 years of age. Epiphyseal separation is more likely to occur in children.

In the treatment of simple fractures, Ross considers the X-ray of great importance to confirm the diagnosis and guide the treatment throughout. In impacted fractures the impaction is not to be broken up unless the fragments are in bad position; all that is necessary is to keep the arm suspended by a sling from the wrist. In the ordinary fracture, reduction is secured by extension and abduction, when, as a rule, the fracture will remain in good position when the arm is brought down to the side. Ross considers that the best results are secured when extension is added to the older method of dressing of binding the arm to the side with a shoulder-cap and pad in the axilla. The extension may be secured in various ways but best by Buck's extension with a weight of four or five pounds suspended from the elbow. This treatment causes some discomfort at first and the patient should sleep in an armless chair but the excellent results compensate for this. In cases where it is necessary to combine extension and abduction, some form of apparatus such as that designed by Middeldorpf, Von Hacker, Osgood, and Penhallow can be used; this combination is only necessary when there is marked abduction of the upper fragment. Plaster may be used as dressing, combined with extension, if desired.

Ross considers operation necessary but rarely, except in compound fractures; it is required most frequently when the lower fragment is displaced to the outer side. Fracture complicated by complete luxation of the head requires operation for replacement and fixation; partial luxations frequently disappear under extension. Involvement of the tuberosities presents no special problem.

FRANK D. DICKSON.

**Mouchet, A.: Late Paralysis of the Ulnar Nerve, Following Fractures of the External Condyle of the Humerus** (Paralysies tardives du nerf cubital à la suite des fractures du condyle externe de l'humérus). *J. de chir.*, 1914, xii, 437.

By Surg., Gynec. & Obst.

Mouchet has had 7 cases of paralysis of the ulnar nerve coming on at periods varying from 5 to 27 years after a fracture of the external condyle of the humerus. He gives case histories of four of these patients, three of whom he operated upon.

In all the cases there had been a fracture of the external condyle in infancy or early childhood. The external condyle is pushed upward and at-

rophied. The fracture surface turns outward and forms a projection which can be seen plainly. In almost all cases a callus permeable to the X-ray is formed between the fragment and the rest of the humerus. The ascent of the external condyle and the change in the line of articulation alters the position of the olecranon, bringing it nearer to the internal condyle, so that the ulnar groove is partially obliterated and the nerve is more or less stretched over the inner border of the olecranon, especially when the elbow is extended. Also because of the changes in position there is an exaggeration of the physiological carrying angle (cubitus valgus). In the normal condition the angle between the axis of the arm and that of the forearm is about 170 degrees; in these cases it may be decreased to 150° or even 135°. Finally, as a result of the abnormal position and the tension on the nerve, neuritis

develops. The fracture may have occurred so long before that the patient has forgotten it, and various mistaken diagnoses are made. Whenever there are symptoms of neuritis of the ulnar nerve and the cause is not known, an examination should be made for evidence of an old trauma. Radiographic examination will show an old fracture, and electrical examination will show the degree of paralysis and the prognosis.

The author treats these cases by supracondyloid cuneiform osteotomy of the humerus. If the external condyle projects too much it is previously extirpated through a small incision 1½ to 2 cm. long over its external surface. It is easily removed by a blow with the chisel. The wound is closed without drainage, and an incision 3 cm. long is made over the internal edge of the humerus down to the bone. Then with a Macewen chisel the

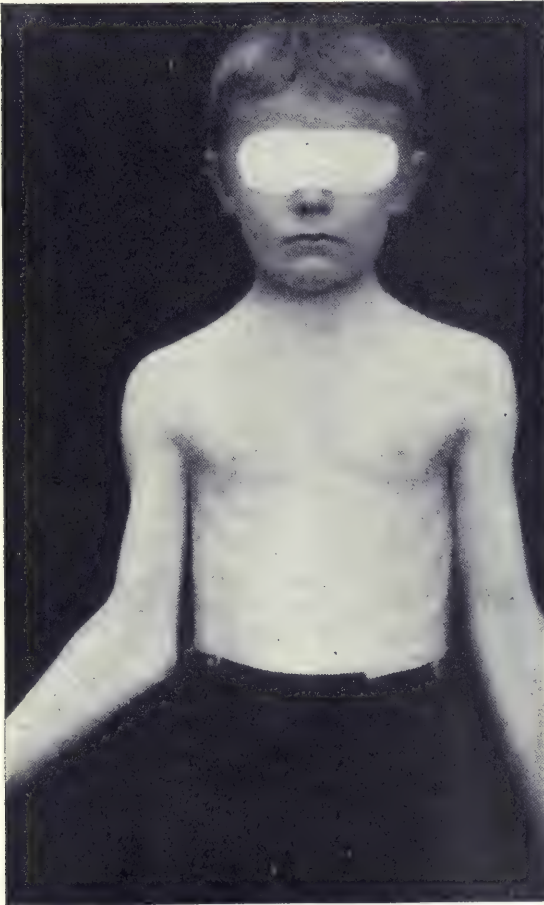


Fig. 1.

Fig. 1. (Mouchet.) Case of very marked cubitus valgus.

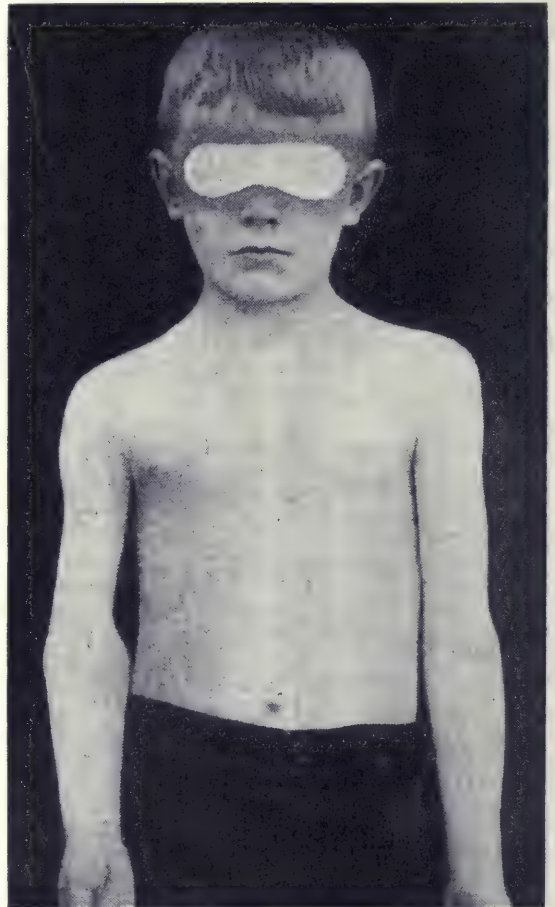


Fig. 2.

Fig. 2. (Mouchet.) Same case after operative correction of the cubitus valgus.



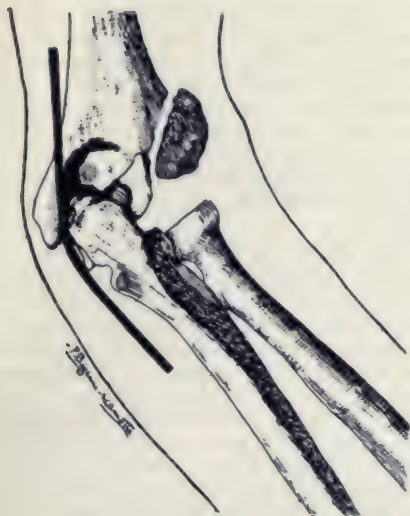


Fig. 3.

Fig. 3. (Mouchet.) Diagram showing the tension of the ulnar nerve over the internal edge of the olecranon in the cubitus valgus following fractures of the external condyle.

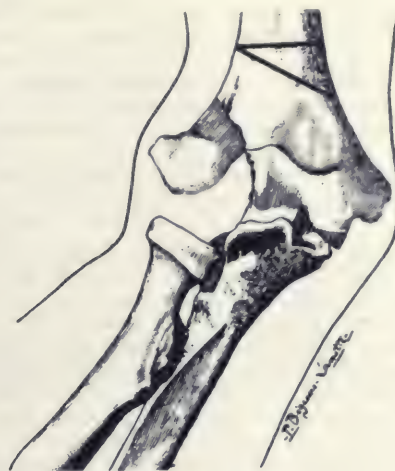


Fig. 4.

Fig. 4. (Mouchet.) Supracondyloid cuneiform osteotomy of the humerus.

humerus is incised perpendicular to the prolongation of the axis of the forearm and a thumb's-breadth above the internal condyle. A second incision is made perpendicular to the axis of the diaphysis, so that a wedge of bone is removed just large enough to correct the position of the arm. The fracture is completed with the hands. To immobilize the humerus it is simply dressed with a Velpeau bandage. The skin is sutured without drainage. No attempt is made to see or touch the nerve. The correction of position removes the source of irritation and recovery follows. In the author's cases pain disappeared at once and the neuritis improved rapidly. The completeness of the recovery depends on the extent to which the nerve has been affected.

A. Goss.

**Mouchet, A.: Congenital Division of the Scaphoid of the Wrist, Simulating Fracture** (Division congénitale du scaphoïde carpien simulant une fracture "Naviculare carpi bipartitum"). *Rev. d'orthop.*, 1914, v, 201. By *Journal de Chirurgie*.

Mouchet publishes a case of congenital duplication of the scaphoid of the wrist and reviews the history of this anomaly in bone formation that is little known in France.

His case was that of a young man of 19, who came to the hospital for a contused wound of the leg. In the course of the examination there was noted a symmetrical anomaly of the hands characterized by the ring finger being longer than the middle finger, and by special shortness of the second phalanges of the index, middle, and little fingers. The feet showed marked shortness of the second pha-

langes of the second, third, fourth, and fifth toes, on both sides. Radiographs showed that the apparent elongation of the ring finger was due to the fact that its second phalanx was of normal length, while there was congenital shortness of the second phalanges of the other fingers. The articular cartilages were not visible and ossification seemed to be complete. The radiographs also showed an anatomical peculiarity of the left carpus. The scaphoid was divided into two portions at its neck: the scaphoid on the external side articulated with the trapezium, the trapezoid, and the os magnum; that on the internal side with the radius, the semilunar, and the os magnum. The young man had never had a traumatism of the left upper limb. Moreover, the absence of protuberances or bony irregularities, the atrophy of the internal scaphoid, and the appearance of the line of separation, which resembled a line of articulation rather than a line of fracture, all indicated that it was a congenital anomaly of the bone, and this supposition was rendered more probable by the concomitant shortness of the fingers and toes.

The bipartite scaphoid, divided into radial and ulnar scaphoid, has been described by Wenzel, Gruber, Struthers, Pfitzner, Wolff, and Schulz. It is probably due to lack of fusion of the two points of ossification of the scaphoid. Pfitzner has found it in a proportion of 0.5 per cent, and Thilenius in a proportion of 3.5 per cent. The existence of this anomaly should be borne in mind, in order to avoid making a mistaken diagnosis of fracture of the scaphoid in an industrial accident that presents simple contusion of the wrist. If it is bilateral or associated with other anomalies of bone it is easily diagnosed; but if it is unilateral, as is generally the case, careful clinical and radiological examination

is necessary. Bipartite scaphoid may be diagnosed from the insignificance of the trauma, the absence of physical signs and functional disturbance, the lack of displacement of the two parts of the scaphoid, the clearness of the line of separation and the smoothness of the surfaces.

ALBERT MOUCHET.

**Sabin, C. G.: Fractures of the Pelvis, with Report of Cases.** *Northwest Med.*, 1914, vi, 159.

By Surg., Gynec. & Obst.

Pelvic fractures receive little space in standard works, which Sabin believes is wrong, considering the high immediate mortality and the complications due to serious injury to soft parts. The various arches which enter into the architecture of the pelvis and the strength of the ligaments form a part of the skeleton, to fracture which great force is necessary. Pelvic fractures constitute 0.3 per cent of all fractures.

According to the violence and the direction of application, a variety of combinations of fractures, displacements, and injury to soft parts results. The diagnosis is generally easy, but great bruising of the soft parts interferes with it, at times, or some other severe injury may direct attention elsewhere. Breaks of the crest permit walking, and are easily recognized. There may be little crepitus. As the patient is often in shock, great care should be used in seeking crepitus; points of fixed pain should be looked for; flexion of thighs is often painless, but pushing or pulling in the long axis is likely to be painful. Fracture of the floor or posterior edge of the acetabulum usually requires the X-ray for diagnosis as to the extent of displacement and position. The pelvic ring may be broken by a force laterally, or from front to back, but the break is usually vertical and in front, or behind. Commonly, fractures of single bones are those of the crest or spine of the ilium. A most common rupture of the ring is a front to back force, driving in the central portion of the pubis. The force continued may cause a break between the sacrum and the ilium on one or both sides.

The serious aspects of pelvic fractures are injuries of the bladder, urethra, rectum, pelvic vessels, and nerves, and often out of proportion to the displacement. Rupture of a full bladder may occur away from the point of bony contact. Prognosis is hard to give, depending much on the amount of injury to the viscera and the promptness of efficient treatment. The author comments on the remarkable brevity of the literature on treatment. In the simple fractures, three or four weeks in bed effects a cure. Most writers advise a firm pelvic bandage if the fracture breaks through the ring, but the author doubts that some of them ever tried it. He found that it increased the pain greatly and did no good — in one case it actually increased the deformity. The best support was a Bradford frame with the canvas not too tight, so the trough formed by the body would exert a slight side-to-side pressure on the pelvis. Extension and counter extension can be used if needed. With a

frame there is no movement of pelvis in using the bed-pan. Filling the bladder with water to determine rupture of urethra is to be condemned. Injuries to viscera should receive careful and immediate attention. Eight interesting cases and their treatment are briefly described.

C. A. STONE.

**Estes, W. L.: Compound Fractures of the Bones of the Extremities.** *J. Am. M. Ass.*, 1914, lxii, 1869.

By Surg., Gynec. & Obst.

Estes gives his personal experience and valuable suggestions regarding 2,080 fractures, 800 of which were compound. The treatment is considered under the following headings: (1) First aid; (2) permanent treatment (a) embracing special considerations, (b) and as to results. The first aid suggestions include a general gauge of the patient's condition; morphine for pain; and control of hæmorrhage by packing with sterile gauze. He does not use the tourniquet and makes no effort to set the bones at this stage of the treatment.

Regarding special considerations under the heading, "Permanent Treatment," he considers the individuality of the patient, his environment, and the actual condition of the injured member. He recommends a general anæsthetic for examination; for disinfecting the injured part, he dries with benzine, ether, or turpentine and alcohol, then paints with iodine.

Conditions determining amputation rather than attempts at conservation are:

1. If the skin has been so crushed or lacerated that it is evident that at least three-quarters of the periphery over the fracture will slough, and the muscles beneath are badly lacerated or comminuted, amputation will be inevitable.

2. If there has been a circular or annular destructive pressure on the whole periphery of the limb, at the site of the fracture, or very near it, amputation will be necessary.

3. If, in a case of compound fracture with a serious annular laceration of the skin, the subjacent muscles are badly comminuted, it will be best to amputate.

4. If the injury has been produced by tremendous pressure, as of a car wheel or heavy pillars of iron or steel, the limb may have the skin of its whole periphery, or nearly all of it, killed but not divided, but the muscles beneath will be torn across and the bone comminuted. Such injuries require amputation.

5. If the main blood-vessels are torn across in the irregularly jagged way common in these injuries, amputation will be necessary. Neither anastomoses nor transplants of blood-vessels will succeed in this class of injuries. The laceration of one of the chief vessels, when there are two in an extremity, does not necessitate amputation. The large nerve-trunks will stand much more injury than blood-vessels and may be sutured successfully unless a long segment of the nerve be destroyed.

6. If the bone or bones are comminuted so that the fragments are loose and deprived of periosteum,



requiring the loss of as much as 6 cm.— 3 inches — of the shaft, this, together with the lacerations of muscles and skin always present in such cases, will require amputation. He advocates direct fixation of the fragments by plates when indicated. He has used Wessel silver since 1886, and believes it has a beneficial effect in compound fractures even with active suppuration present. He does not believe the Lane plates the best for these cases, nor does he believe in vascular anastomoses. In the summing up of his results he says: "The number of cases is too small for any set conclusion with regard to the treatment of compound fractures; but, certainly, in his small series, direct fixation has produced much quicker recoveries and far better results than the former conservative methods." H. B. THOMAS.

**Harris, M. L.: Modern Treatment of Fractures.**  
*J. Mich. St. M. Soc.*, 1914, xiii, 355.  
By Surg., Gynec. & Obst.

The author expresses the opinion that a perfect anatomic reduction in fractures by external manipulation is, in the majority of cases, impossible. Three important rules in treatment of fractures are: (1) Be certain that you are thoroughly familiar with the exact condition. (2) Inform the patient of the condition at all times. (3) Use the röntgen ray.

As to the open treatment of fractures, the fact that the technique is difficult is not a contra-indication. It is the author's belief that a perfect functional result is impossible without a perfect anatomic result, and that if the open operative treatment brings greater benefit to the patient, then it should be adopted. Although the technique and materials for internal splints vary, the general principle of fixation by open operation has become definitely and permanently established. The objections to this method are suppuration, pain in the bone, and interference with osteogenesis. Suppuration is almost always due to faulty technique.

The author concludes with the usual warning that only those equipped and thoroughly trained in the special technique of bone surgery should attempt an open operation. W. A. CLARK.

**Davison, C.: Treatment of Fractures by Medullary Bone-Splints.** *Surg., Gynec. & Obst.*, 1914, xviii, 750.  
By Surg., Gynec. & Obst.

The author recommends the use of autoplasmic bone-pegs in the open operative treatment of difficult simple fractures, imitating the action of the internal callus in the physiological healing of fractures.

Lane plates and screws are foreign bodies and their presence is more or less resented by the living tissues.

Bone-splints of the same kind of bone taken from the same individual are treated kindly by the tissues and at least remain long enough for complete fracture healing, no matter what their ultimate fate may be.

Live bone-splints, buried in the medulla of healthy bone, have the active resistance of living tissue against infection.

Two cases are described, one an irreducible spiral fracture of the tibia in which a splint three inches long and one-half inch in thickness in each direction, without its periosteum, was taken from the opposite tibia and placed in the medullary canal across the fracture defect. The other case was a long spiral fracture of the shaft of the humerus in which a splint, five inches long, was taken from the tibia and placed in the medulla across the fracture.

**Walters, C. F.: Autoplasmic Intramedullary Bone-Pegging as a Method of Operative Treatment for Fractures.** *Bristol. Med.-Chir. J.*, 1914, xxxii, 139.  
By Surg., Gynec. & Obst.

The author reports two cases of autoplasty for ununited fractures. He believes that the method is a new one. The only noteworthy fact is that in one case the transplant was unsuccessful in procuring union, and after its removal plating was resorted to and union occurred. A. R. COLVIN.

**Le Damany, P.: Congenital Dislocation of the Hip.**  
*Am. J. Orth. Surg.*, 1914, xi, 541.  
By Surg., Gynec. & Obst.

During intra-uterine life the acetabulum of the fœtus is subject to a decrease in depth, from that of a hemisphere at six months to that of about a third of a sphere at term. This is due to lack of pressure of the femoral head without which the acetabulum atrophies. After birth the cavity deepens until it is finally more than a hemisphere.

The femur also is subject to malformation. There is a torsion of the neck of the shaft, occurring at the superior diaphyseal line of ossification, causing a rotation amounting to 35 degrees at term. This deformity is also decreased after birth and amounts to about 12 degrees in adult life. These two malformations arise from the same mechanical cause. The pressure of the wall of the uterus on the knee of the fœtus brings a counter-pressure of the shaft of the femur on the anterior part of the ilium. The femur thus becomes a lever of the first class, with the result that the pressure of its head in the acetabulum is decreased and its neck, which because of its fixation is less movable than the shaft, remains more or less fixed while the shaft rotates upon it. These malformations of the femur and acetabulum produce luxations only after birth when the child unbends itself for the erect posture. With extension of the femur at this time the neck becomes oblique forward and inward and the head is forced out of the acetabulum.

In boys, the shape of the pelvis, narrow below in proportion to the top, causes the acetabulum to be directed strongly downward. In girls, however, the pelvis is proportionately broader below and the acetabulum consequently more vertical. This accounts for the predisposition of the female sex to congenital luxation of the hip.



After reduction, immobilization is necessary but this must be shortened to prevent stiffness. Two months is the minimum, three the maximum, even for older children. The position is 90 degrees flexion and 90 degrees abduction, no rotation. After this first period of immobilization an adjustable apparatus is applied which maintains abduction and flexion and permits the patient to walk. This is worn from four to six months and then is removed giving the patient complete liberty. A perfect gait is restored in from six months to two years in some cases; others may require three to five years, and still others may never have complete restoration of function because of conditions due to age. The anatomic results secured by this treatment have been about 97 per cent cures. W. A. CLARK.

**Hardouin, P.: Clinical and Experimental Study of Traumatic Backward Luxations of the Knee** (*Étude clinique et expérimentale sur les luxations traumatiques du genou en arrière*). *Rev. de chir.*, 1914, xlix, 327. By Journal de Chirurgie.

Since the publication of Malgaigne's 12 cases Hardouin has found 17 new cases in France, and enough in the foreign literature to bring the new cases up to 79. He divides them into (1) direct luxations, complete or incomplete; (2) luxations backward and outward; (3) luxations backward and inward; (4) luxations backward with rotation. He discusses the experimental work of other authors and describes his own. He has been able to reproduce experimentally all the forms of backward luxation found clinically; and on the cadaver, he has found that luxation backward was possible with the preservation of a certain number of ligaments intact, or at least only slightly injured, especially with preservation of one or both of the lateral ligaments.

A concomitant luxation of the fibula on the tibia is frequent in certain of these forms, while incomplete backward luxation with integrity of the anterior ligament is possible. Even complete luxation has seemed possible in some cases without great displacement. Generally, the anterior crucial ligament is torn from its periosteal attachment and elongated. Luxation backward is impossible with integrity of the anterior and posterior crucial ligaments. Autopsy, amputation, or operation has made a direct study of the lesions possible in 27 cases. In 13 cases there was direct backward luxation; in 3 cases luxation backward and outward; in 6 cases luxation accompanied by external rotation; in one case rotation inwards; and in 12 cases there were lesions of the popliteal vessels, which necessitated removal when death did not occur before operation.

The crucial ligaments are often ruptured. This was noted in 11 cases out of 12 of complete luxation. In a total of 93 published cases there have been 64 direct backward luxations, 27 of them complete, 22 incomplete, and 15 not specified; luxations backward and outward 11; backward and inward 3; by external rotation 14; by internal rotation 1. Lesions

of the extremities of the neighboring bones are relatively infrequent; vascular lesions are very frequent; skin wounds are rare. Displacements from indirect causes, such as sudden arrest of the extended leg, or suspension, are not rare. Displacements by rotation result from forced torsion of the leg. The knee is large, shows hæmarthrosis, and is increased in its anteroposterior diameter. Bayonet-shaped deformity is characteristic. Spontaneous motion is impossible; abnormal movements to varying degrees being the rule.

In complete luxation there is shortening. The immediate complications are opening of the joint, fractures, ruptures of the vessels, and thrombosis. The late results are stiffening of the joint and limitation of motion, sometimes exaggerated flaccidity or recurrent luxations. The differential diagnosis, which is generally easy, must be made from fractures of the upper extremity of the tibia, or of the lower extremity of the femur. As rapid reduction as possible should be made to avoid pressure on vessels and nerves. General anæsthesia is necessary. In general, the results are satisfactory, often even excellent. Old irreducible dislocations necessitate operation. Among the complications, rupture of the vessels is the most serious and, thus far, it has been treated only by amputation; perhaps, in the future, suture of the vessels will be attempted. The treatment of late complications varies with the nature of the complication. J. OKINCZYK.

#### SURGERY OF THE BONES, JOINTS, ETC.

**Hughes, B.: The Complications and Treatment of Compound Fractures.** *Clin. J.*, 1914, xlviii, 397. By Surg., Gynec. & Obst.

From the point of view of treatment, compound fractures may be divided into three classes:

1. Those of slight severity, in which there is a small skin opening, the bones not protruding and not visible.
2. Those of medium severity, with considerable external opening, the fractured ends not protruding but visible, the displacement being small.
3. Severe compound fractures, both those involving and those not involving joints. Bone protruding through the skin, stripped of periosteum, and usually soiled, the latter depending upon the locality where the injury was received.
4. Another class includes fractures of bones normally situated close to mucous membranes. These are unfavorable on account of the organisms normally present.

Repair in compound fractures is usually slower and the amount of callus less than in simple fractures, possibly due to wider separation or to stripping of the periosteum. If sepsis is present it naturally prolongs the process of union. The author has never seen "fat embolism" as a complication; in those cases where it was supposed to be present, it proved to be some other condition.

Tetanus may occur in cases subjected to road



soiling, though it is not common, and all these should be given antitetanic serum.

The main complication is sepsis. With it convalescence is slow, muscles and other tissues are involved, sequestra are formed, the periosteum becomes fibrous, its power of bone regeneration lessened, and the utility of the leg is seriously impaired.

In all cases, a wad of cotton, soaked in carbolic acid (1:20) or a strong antiseptic, is placed over the wound. The patient is anesthetized, the clothing removed, and the skin about the wound is cleansed.

The two principles to be remembered are: (1) prevention of further infection of the wound, (2) elimination of whatever infection is present.

If the fracture is of the first class, the wound is thoroughly disinfected with Lister's strong lotion, composed of equal parts of 1:20 carbolic acid and 1:500 corrosive sublimate. The fracture is reduced, the skin about the wound is excised, as in all classes, and the wound closed. The limb is put in splints, and the patient put to bed with the leg up.

In the second class, the wound is irrigated and dried; the bone sponged with pure carbolic acid and washed with saline solution; the ends of the bone are brought together, and the periosteum drawn over the fracture by catgut. The skin is sutured, and drainage made through an independent opening. This periosteal bridge seems very successful, and the author does not believe in introducing any foreign substance.

In class three, the protruding ends of the bone are thoroughly cleaned, and may be scrubbed with Lister's mixture. If the ends are very dirty they may be cut off, and touched with pure carbolic acid. The wound is enlarged, and the skin and tissue cut away and sterilized. The bones are then brought together and bridged with periosteum. The wound is closed and treated as above.

In those cases in which there was suppuration the infection was mild. The most common organisms found where this condition was present were staphylococcus albus, a large diplococcus, similar to the one found in pyorrhœa alveolaris, and the bacillus coli communis. When suppuration appeared the stitches were removed. A splint was applied, and the wound washed out daily with peroxide and sterile saline solution. In all these cases an autogenous vaccine was used. The results were most gratifying. If intestinal stasis was present, an intestinal antiseptic was given.

When the wound has healed, early massage should be used to promote union.

Diabetes should always be thought of, and a Wassermann made, as a routine. If syphilis is present, anti-syphilitic treatment should at once be instituted.

ARCHER O'REILLY.

**Clarke, J. J.: Open Operations in the Treatment of Fractures and Dislocations.** *Univ. M. Rec.*, 1914, v, 489.

By Surg., Gynec. & Obst.

In many cases of recent simple fractures, early operation gives the best result. In approaching

the subject, it is best to make an anatomical subdivision as follows:

1. Fractures involving joint cavities, including some epiphyseal separations.

2. Fractures close to joints, including most epiphyseal separations and injuries to the carpus and tarsus.

3. Fractures of the shafts of the long bones.

4. Fractures of the flat bones.

5. Fractures of the bones and skull, face, or of the spine.

Injuries at or near joints have longest been recognized as demanding open operation. Open operation in recent fractures of the long bones has of late demanded almost more attention than joint injuries. Clinical conditions must be carefully considered before operation is decided upon. In some cases late operation is necessary on account of non or faulty union.

In all operations the technique should be perfect, and the assistants should be well-trained and adequate. Recently, with improved technique, early operation has become more general. The sooner the operation is performed, the sooner can massage and movement be begun.

This branch of operative surgery demands a vast array of important technical details. The details used in the fracture of the patella are illustrated by the author. Union without operation is difficult, because the soft parts fall between the fragments. The author illustrates methods of holding the fragments by a wire loop, by a screw, by a bolt, and by a Lane plate. He thinks the simplest method best, and inclines to the use of a wire loop. If it is decided to drill the bone for a wire or screw, it should be ascertained that the bone is strong enough to bear drilling. If no apparatus is at hand, the capsule may be closed by a stout silk suture on each side of the patella. The whole tear is then sutured.

When epiphyseal cartilage is present in the neighborhood of a fracture, it should not be involved in any metal apparatus. A silk suture is usually sufficient; if a plate must be used, it should be removed as soon as union is firm, to avoid interference with growth.

Rupture of the patellar ligament, or the quadriceps, requires open operation and suture.

Other knee-joint injuries that call for open operation are:

1. Displaced semilunar cartilage, in which the incision is best made on the inner side back of the patella, thus allowing access to both cartilages.

2. Dislocation of the knee with laceration of the ligaments.

In tears of the crucial ligaments the joint is opened by vertical splitting of the patella, and the ligaments are sutured. A separated spine of the tibia is secured by screwing. Separation of the lower epiphysis of the femur, or of the shaft above it, may need to be pried into place.

Dislocation of the patella may need suture of the torn ligaments.



Sprains, fractures, and dislocations about the shoulder frequently call for open operations. Displacement of the tendon of the long head of the biceps is classed as a sprain, and has been found to explain the symptoms of subluxation of the shoulder described by Cooper. Shoulder dislocations in which the gentler methods fail should be dealt with openly, and also cases unreduced for over four weeks.

Fracture of the acromion and dislocation of the acromioclavicular joint are best treated by open operation. The conoid and trapezoid ligaments may have to be replaced by artificial silk ligaments.

A separated anatomical head is removed. Operation is also indicated in paralysis of the circumflex nerve.

For access to the back part of the humeral head and glenoid cavity, it is necessary to detach and deflect outwards the acromion, as devised by Kocher, for resection of the joint.

In old shoulder dislocations when the head can not be replaced, it should be removed.

In separation of the upper humeral epiphysis, suture of the fibrous covering of the bone with the arm put up in abduction gives good apposition.

Fracture of the olecranon is best held by a wire passed transversely through a drill hole in the lower fragment and through the tendon of the triceps above.

Supracondylar fractures, oblique intra-articular fractures, T-fractures of the humerus, and fracture of the internal condyle or its epiphysis, are best treated by screws or plates.

In some cases open operation is necessary in the common but important fractures about the lower end of the humerus in children.

Most injuries at the wrist do well when treated conservatively. A forward displacement of the semilunar requires immediate reduction to avoid pressure on the median nerve. A dorsal incision enables the bone to be levered into position.

Dislocations at the hip rarely require operation, but fractures do. If there is more than ordinary difficulty in reducing, operation is advisable. Intra-capsular fractures, except in the aged, and separation of the epiphyseal head may require operation. The joint may be opened, and three short double points of steel fixed in the head. Then the fragments are brought together by traction, and held by pulling the leg in abduction. Subtrochanteric fractures are plated.

Fractures at the ankle-joint call for open treatment more often than others.

In every severe fracture of the internal malleolus the soft tissues are sucked between the fragments. The method of treatment used is similar to that for the olecranon. If the tendon of the tibialis posticus is displaced forward it must be replaced. The external malleolus and the shaft of the fibula may be plated.

Three examples of ankle fracture are given.

ARCHER O'REILLY.

**Murphy, J. B.: Arthroplasty for Intra-Articular, Bony, and Fibrous Ankylosis of Temporomandibular Articulation; Report of Nine Cases.** *J. Am. M. Ass.*, 1914, lxii, 1783.

By Surg., Gynec. & Obst.

Murphy reports nine cases of ankylosis of the jaw, in which he has performed a typical and uniform arthroplasty. His results justify him in advocating the technique for this condition.

In treating the affection, an L-shaped incision is made; after separating the tissues and exposing the neck of the mandible, a Gigli saw, burr, or chisel is used in severing the neck, sufficient bone being removed to admit the flap. The flap of fat and fascia is prepared, the lower border of which is attached to the upper margin of the zygoma.

The flap is packed into the bony opening and held in place by catgut sutures. The skin is closed with horsehair and sealed with collodion gauze.

A small wooden block is placed between the jaws to prevent pressure on the flap. J. H. SHAW.

**Lejars: Resection in Old Cases of Traumatism of the Hip** (Contribution à l'étude de la résection dans les traumatismes anciens de la hanche). *Bull. et mém. Soc. de chir. de Par.*, 1914, xl, 497.

By Journal de Chirurgie.

Lejars performed this resection in two cases: (1) For an old unrecognized iliopubic luxation of the left hip in a man of 32, and (2) for an old unrecognized fracture of the neck of the left femur in a man of 42. In both cases walking, and even standing upright, were impossible; the shortening was 5 cm. in one case and 4 cm. in the other. In both cases the final result was good: the patients could walk easily, although complete amplitude of the movements of the joint was not recovered.

It is well in these resections to preserve a fibrous capsule around the fragment of the neck and the trochanter to serve as a point of support for the new extremity of the femur and to contribute to its regular motion. The incision should be sufficiently long, Kocher's retro- and supratrochanteric arched incision being the best. The capsule having been incised, it is better not to perform a total denudation of the extremity of the femur with the bistoury, and not to bring the head and neck outside the wound. It is better to leave them *in situ* and perform the resection piecemeal with the chisel and mallet, removing the bone in fragments. After the operation, methodical mobilization should begin, at the end of about three weeks, and be continued for several months. Performed in this way resection in old traumatism of the hip may give a remarkable improvement in function. J. DUMONT.

**Delatour, H. B.: A Review of Ninety-Nine Arthrotomies for Fracture of the Patella.** *Ann. Surg.*, 1914, lix, 975.

By Surg., Gynec. & Obst.

Delatour's article is a report of cases with interesting remarks regarding technique and results.



Two of the 101 fractures of the patella were not operated on. In one of these, the two fragments were separated but slightly and the tendinous expansion of the vastus muscle had not been torn. Adhesive plaster held the fragments together with satisfactory result.

When operation was the method of treatment it was usually performed 48 hours after the injury. A curved incision was used, and the flap which included the skin and all structures to the patella tendon was dissected down to the lower edge of the patella, giving a good exposure of the fracture, joint, and the tear extending down on either side of the joint through the tendinous expansion of the vastus muscle. All soft tissue which had fallen between the fragments was removed, the edges freshened, the rents in the lateral portion of the capsule repaired, and the posterior edges of the fracture brought together. Mattress sutures were placed crosswise through the patella tendon above the upper fracture and carried across the tendon below the lower fracture. Delatour believes "the effect of this is to take the strain from the transverse line of sutures during the recovery from the anæsthetic, when the great quadriceps muscle contracts. A final row of sutures is placed in the anterior layer of the tendinous expansion over the bone."

The plaster cast is partly removed after ten days when the patella is massaged. After three weeks the joint gets passive motion; the cast is discarded at night, but a posterior splint is continued while walking, for at least three months. The results as reported are as follows: "In 99 instances the fracture was exposed and sutured. Six have useful joints but with limited motion. Forty-four have flexion, to at least a right angle, and have perfectly useful joints. The remainder have not been traced but all had motion to at least 45 degrees at the time of leaving the hospital."

H. B. THOMAS.

**Durand, M.: Amputations of the Foot** (Les amputations du pied). *Arch. prov. de chir.*, 1914, xxiii, 129. By Journal de Chirurgie.

Durand reviews the different methods of amputation practiced by French surgeons. He mentions several methods of intertarsal disarticulation that may be used in case Lisfranc's amputation is impossible on account of lesions of the bone or injuries to the soft parts: disarticulation in front of the scaphoid and cuboid, Bona's disarticulation which removes the projecting part of the cuboid, and disarticulation in front of the scaphoid and os calcis.

The results in these three operations are about the same as in Lisfranc's and do not give rise to the deformities that so frequently follow Chopart's amputation. But this intertarsal disarticulation has not regained in the past few years what it had previously lost. Indications for it are rare, not to say exceptional; it is not superior to the more mutilating operations, and many authors hold that the operations that sacrifice more give a stump that

can be more readily utilized in prosthesis. Operations that sacrifice a part of the posterior tarsus, such as the subastragaloid and Ricard's, seem more satisfactory, and after them the osteoplastic operations—le Pasquier's, Lefort's, and lastly, Pirogoff's.

Tibiotarsal disarticulation by Ollier's subperiosteal method gives very remarkable results. It is frequently indicated and often it is the only one possible. The small amount of skin demanded and the total sacrifice of the tarsus, which is so often diseased or suspected of tuberculosis, cause Syme's and Roux' operations to be practiced more frequently than any other amputation of the foot. This tibiotarsal disarticulation gives functional results equal to those of the osteoplastic amputations of the tarsus, and not inferior to those of Ricard's and the subastragaloid operation. If the extent or the nature of the lesions cause the surgeon to hesitate it is better to select the radical operation, which gives greater certainty of recovery, without particularly diminishing the functional value of the result.

G. LABEY.

**Geiger, C.: The Electric Drill, Saw, Reamer, and Trephine in Bone Surgery.** *Surg., Gynec. & Obst.*, 1914, xviii, 763. By Surg., Gynec. & Obst.

The author says that the old crude methods of employing the chisel, hammer, and hand drill, are unscientific procedures, requiring too much valuable time, and exhausting the patient. With the electric circular saw the author removes bone-grafts varying from two to ten inches in length. Bone-grafts cut in this manner are used in Pott's disease and ununited fractures, in place of Lane plates. The grafts are usually taken from the tibia. By the use of this method there is a minimum of handling, manipulating, and trauma, which lessens infection in bone-grafting.

Holding the motor by means of the hand piece, the cable which usually conveys the power from the motor to the instrument is supplanted. The cable is always in the way, and if bent at an acute angle, while running, it generates heat and its action is retarded. After inserting any of the interchangeable instruments the operator has a steady and absolute control of his bone-work.

In mastoid and cranial work it does away with the jarring and concussion by hammering.

The complete set consists of one motor, one sterilizer, two drills, two burrs, two saws with mandrels, one trephine and one cranial saw.

This instrument was tried out by Murphy, during the Clinical Congress of the Surgeons of North America, November 13, 1913, and he states: "This is a first-class device, and by the use of this set of instruments—trephine, cranial saw, burr, and drills—we simplify and modernize bone surgery, also reduce the time and labor, essential factors in this important branch of work. The great power and efficiency of this small instrument, as a motor, saw, electric drill, reamer, and trephine, deserve the highest commendation of the profession."



**Young, T. C.: Surgery of Bones and Joints.** *Calif. Elect. M. J.*, 1914, vii, 119.

By Surg., Gynec. & Obst.

The author gives his views in reference to the selection of fractures for open and non-operative treatment, with his own and others' ideas regarding the technique desirable in various cases. He also discusses briefly diseases of the knee-joint.

Believing that there is no subject in medicine of more widespread interest than that of fractures, the author gives X-ray work credit for stimulating the practitioner in careful diagnosis and treatment, and Lane credit for the enormous impetus given the treatment of fractures by means of the steel-plate. Young, however, makes a plea for "common sense" treatment for many fractures, especially those near joints, in which cases he thinks the open operation is wholly uncalled for. He believes that "ordinary surgical asepsis is not sufficient for bone surgery; every tissue must be handled with forceps and not by the gloved hand. No sponge should be applied to the wound the second time. The skin surface should be protected by folded gauze or towels saturated with a normal salt solution, and the wound closed with skin clips."

Comment is made regarding bone-grafting, and he believes that those who attempt it should be speedy, mechanical, and have a complete understanding of asepsis. Diseases of the knee-joint are briefly discussed and two surgical means of treatment considered: First, orthopedic or mechanical means; second, open operative methods accompanied by orthopedic appliances. He believes that incisions into the knee-joint do not necessarily leave a stiff joint, and describes the technique for open work.

H. B. THOMAS.

**Sexsmith, G. H.: Bone and Joint Surgery.** *J. M. Soc. N. J.*, 1914, xi, 271. By Surg., Gynec. & Obst.

Sexsmith says bone and joint surgery has met with much criticism, because of the after-results of operations and the liability to legal entanglements. Too many physicians who have not had sufficient experience undertake cases which they are not able to treat, while in abdominal surgery no one would attempt its practice without thorough training.

With our present knowledge, fractures and luxations must be treated by applying proper mechanical knowledge in order to get good functional results, and not merely a correction of the anatomy.

In regard to the Lane plate, he says, except where it is absolutely necessary to join fragments, it is generally better to use the old-fashioned splint, thus avoiding chances of infection. In using plates or grafts it is better to wait 10 or 12 days so as to allow the tissues to heal, thus preventing germ invasion.

In a simple fracture there is not much danger, but in a compound fracture life and limb are endangered.

In treating a compound fracture, unnecessary examinations, and cleansing as it is usually done, should be avoided. If the wound is contaminated

with oil, it should be removed with benzine. Iodine is painted about the wound, and loose bones or bruised tissue are removed with instruments. Silkworm gut or horsehair are used to suture wound edges. A 5 per cent carbolyzed gauze dressing is applied and not removed for 10 days. Any rise in temperature over 48 hours calls for drainage. If the stitches are removed iodine is poured into the wound and packed with gauze. If the X-ray shows bad apposition, splints or grafts may be necessary.

Sexsmith thinks that the bone-graft in non-union of fractures is better than the Lane plate or nails. He has found in non-union of the long bones of the leg that by the use of a leather brace and ambulation, good union has resulted in from 3 to 6 months, the friction of the fragments producing osteogenetic elements.

In regard to infectious arthritides, he advocates the Murphy treatment, which is an aspiration of the joint, followed by an injection into the cavity of a 2 per cent formalin and glycerine solution, together with Buck's extension.

For the relief of ankylosed joints he advocates the arthroplastic operation of Murphy, the most important factors of which are the proper formation of the flaps, strict asepsis, and careful technique.

J. H. SHAW.

#### ORTHOPEDICS IN GENERAL

**Fraser, J. and Robarts, H. H.: Congenital Deficiency of the Radius and a Homologous Condition in the Leg.** *Lancet*, Lond., 1914, clxxxvi, 1606.

By Surg., Gynec. & Obst.

A case of each condition is reported. A study of embryology suggests that here is to be found an explanation of the condition. The hand at birth was tucked into the axilla and held in such a way that the normal rotation at the elbow was interfered with, and it was strongly deviated to the radial side. The radius was represented by a thin rod, occupying a position about the middle third of the ulna, which was convex inward. Correction by tibial bone transplant was proposed.

The leg showed a deficiency in the lower third of the tibia which terminated about the center in a cuplike covering of fibrocartilage. The lower epiphysis and a small pyramidal mass of diaphysis were present. Operation, consisting of tibial transplant, was entirely successful, giving a perfect result after nine months.

C. E. WELLS.

**Cremer, M. H.: Psoas Parvus Contraction.** *J. Lancet*, 1914, xxxiv, 338. By Surg., Gynec. & Obst.

The author reports a case of contraction of the psoas parvus muscle causing severe pain on the inner, anterior, and posterior sides of the leg, and in the inguinal region. After various unsuccessful attempts at treatment, including an exploratory laparotomy, the tendon of the psoas parvus was found to be under great tension and was divided. Relief was immediate and permanent. This condi-



tion is comparatively new to surgery. The symptoms may simulate appendicitis, Pott's disease, sacro-iliac disease, synovitis of the hip-joint, sciatica, and other diseases.

W. A. CLARK.

**Mauclaire: Semi-Articular Grafts and Typical or Atypical Resections of the Knee for Osteosarcoma** (*Greffes semi-articulaires et résections typiques ou atypiques du genou pour ostéosarcomes*). *Arch. gen. de chir.*, 1914, viii, 425.

By Journal de Chirurgie.

Of recent years several surgeons have recommended conservative operations in all cases of osteosarcoma, but Mauclaire has had bad results with such operations except in myeloid sarcoma. If the patient demands conservative operation he prefers resection. Osteosarcoma, even of the most malignant type, is a form of tumor that shows many surprises in prognosis. Jaboulay reports a case of myeloid sarcoma of the radius, operated upon in 1902, which finally recovered after ten additional operations. The treatment varies depending on whether the sarcoma is of the diaphysis or the epiphysis. In the former, after partial resection, a fragment of the fibula or crest of the tibia may be grafted. In the latter, typical resection is difficult; in such cases after resection a homo- or autoplasmic graft may be made from the living subject or a corpse, or an atypical resection may be performed. He reports two groups of cases: one of semi-articular grafts, homo- or autoplasmic, from living subjects or corpses, the other of atypical resections.

*Semi-articular grafts.* (LEXER.) (a) In a case of myelogenous sarcoma of the upper extremity of the tibia, there was a semi-articular homotransplantation of the same bone from a patient who had been operated on for senile gangrene. Good results were obtained, but the patient was so obsessed with the idea of the graft that it had to be amputated. (b) In a case of central sarcoma of the upper part of the tibia, a homotransplantation was done from an amputated leg. The result was good. (c) A homologous living graft was used in sarcoma of the lower third of the femur, with good functional result. There was a rapid recurrence. (d) In myelogenous sarcoma of the upper extremity of the humerus, a graft was made of the lower half of the femur taken from an amputated limb and fixed with a fragment of the fibula of the same limb. Good result. (e) Good results were gained in a case of myelogenous sarcoma of the lower half of the ulna by grafting the lower half of the tibia of an amputated limb.

(KUTTNER.) (a) In osteosarcoma of the upper third of the tibia a homotransplantation was made of the same bone removed from a corpse three hours after death. Good result. (b) In sarcoma of the upper extremity of the femur a graft was made of the same bone removed from a corpse, 11 hours after death, and preserved for 24 hours in Ringer's fluid. It was fixed with ivory chips. There was a good functional result; rapid recurrence. (c)

Graft from a corpse removed three hours after death was used in a case of chondrosarcoma of the upper extremity of the femur. At the end of seven months there was a fracture of the neck of the femur with consolidation. After extirpation of a local recurrence there was a good result.

(PUTTL.) In osteosarcoma of the upper extremity of the femur, a living autoplasmic graft was made with the fibula. Death resulted from pulmonary metastasis 13 months after the operation.

(WALTHER.) Good results followed the autotransplantation of the fibula in a case of myeloid sarcoma of the lower extremity of the radius.

(ROVSING.) In sarcoma of the internal condyle of the femur, a homoplasmic graft was made of the humerus. After resection of the latter and semi-articular homotransplantation of the femur, there was a good result and progressive consolidation.

(VIANNAY.) In osteosarcoma of the lower extremity of the tibia, an autotransplantation was made of the fibula fixed above into the tibia, below into the astragalus between the body and the internal surface. Good result.

(MAUCLAIRE.) In a case of myeloid osteosarcoma of the lower epiphysis of the radius: (1) Resection was done, then autotransplantation of the fibula, March, 1913. (2) A local recurrence was removed Nov. 6, 1913. (3) There was removal of the fibular graft and homologous homotransplantation from an amputated arm, Jan. 15, 1914. Elimination of the homotransplantation. Living grafts give some good results, but there is some question as to the value of grafts from the cadaver.

2. *Atypical resections.* (MAUCLAIRE.) In a case of central myeloid sarcoma of the upper extremity of the tibia, the epiphysis of the tibia was resected and the diaphysis implanted into the femur. There was good functional result after resection of the upper extremity of the fibula.

(BRAMAN.) A case of resection of the knee and implantation of the fibula into the femur.

(ALBERTIN.) Good results were obtained in a case of myeloid tumor of the upper extremity of the tibia, by resection of the tibia and fibula, and the implantation into each of the condyles of the diaphyses of the femur and tibia.

(TIXIER.) In a case of osteosarcoma of the upper extremity of the tibia resection of the femur and tibia, and implantation of the fibula in the femur produced good results.

(JABOULY.) In a case of osteosarcoma of the upper extremity of the tibia, the tibia and fibula were resected and the fibula was implanted between the two condyles of the femur. Metastasis occurred four months later.

All these conservative operations are justified only in myeloid sarcomata. In other cases it is better to perform an amputation or a disarticulation far from the new-growth. Histological examination of a fragment from the tumor is necessary in order to determine the nature of it and decide on a logical operation.

BERNARD DESPLAS.



**Altermann, I.: Study of the Congenital Malformation of the Ankle, Called Volkmann's** (Contribution à l'étude de la malformation congénitale du cou-de-pied, dite de Volkmann). *Thèses de doct., Par.*, 1914. By Journal de Chirurgie.

A new case of this curious disease is reported, bringing the number of cases up to 13. There are two clinical types. In the most frequent one (11 cases) the lesion is bilateral and appears at birth; there is also a marked shortening of the leg and a pronounced valgus position of the foot. In the other type (2 cases) the deviation of the foot is markedly varus. All of the functional and physical symptoms are due to an abnormal obliquity of the line of the tibiotarsal articulation — normally it is horizontal. The malleolus is thickened and covered with bony projections, and its apex comes very close to the ground; the external malleolus, contrary to the normal condition, is farther from the ground 5 or 6 cm. or even more. The epiphysis of the fibula is sometimes bent outward, forming a more or less obtuse angle with the diaphysis. The astragalus is deviated outward, its internal surface supporting almost all the weight of the body. It is not a question, as Volkmann believed, of a congenital outward luxation of the foot; the obliquity of the line of articulation is the essential point, the deviation of the foot being only the result of it.

As to pathogenesis, Volkmann's disease must be clearly distinguished from congenital absence of the tibia or fibula, for, in the former, radiography always shows that all the bones are present. Heredity is observed in Volkmann's disease, and it may be a regressive anomaly. The cause is unknown.

The first step of the treatment consists in having the child wear an orthopedic appliance to prevent an increase in the deformity; later, about the tenth year, an operation should be performed. There are three methods of operation: tenotomy, osteotomy, and tibiotarsal arthrodesis — the latter is the operation of choice. It has the double advantage of correcting the deviation of the foot and of immobilizing the ankle-joint in the correct position. The shortening is slight, and does not prevent normal functioning of the limb. L. CAPETTE.

**Ehrenfried, A.: Club-Foot: a Statistical Note.** *Am. J. Orth. Surg.*, 1914, xi, No. 4. By Surg., Gynec. & Obst.

The author shows, by a statistical compilation, some etiological factors in club-foot and other congenital deformities. His statistics cover a period of six years and the observation of a few hundred cases. Equinovarus is shown to be three times as frequent as any other form, potential calcaneovalgus the next most common. Males are affected two to three times as often as females. Double deformities occur in over 50 per cent of cases. Over 50 per cent of single deformities are right-sided. Heredity figures in 5 per cent, and hereditary cases all have equinovarus deformities, usually double. Club-foot is three times as common

in twins as in single pregnancies. Difficult labors occur in one-fourth of all cases, premature birth in 3 per cent, illegitimate in three per cent; one-fifth show other congenital deformities.

Of club-foot in near relatives 5 per cent are equinovarus, and 80 per cent have double deformity.

H. W. MALTBY.

**Willems: Tarsectomy for Club-Foot: A New Method of Operation** (La tarsectomie pour pied bot. Un nouveau procédé opératoire). *Arch. internat. de chir.*, 1914, vi, 369. By Journal de Chirurgie.

Willems prefers tarsectomy in the treatment of club-foot. It gives a shorter foot than some other methods, but one that keeps its form and suppleness. There are four steps in his "anatomical" tarsectomy.

The first step is to resect a flap of skin from the dorsal surface of the foot so that too much skin will not remain after the operation.

The second step is the complete resection of the astragalus by chisel and mallet.

The third step is the transverse resection of the anterior tuberosity of the os calcis. This resection should be extensive enough to give the foot a sort of balancing motion. If necessary, one-half or two-thirds of the anterior part of the os calcis may be removed, and even in extreme cases a part, or all, of the cuboid and even the scaphoid.

The fourth step is the lifting and rotating outward of the anterior part of the foot, which brings the cuboid, or if it has been resected, the head of the fifth metatarsal, into the opening between the tibia and fibula. This operation serves admirably to correct all three elements of the deformity: the equinism, the plantar inversion, and especially the adduction of the anterior part of the foot. The extent of the resection may seem excessive, but experience has shown that after extensive resection the remaining bones adapt themselves very rapidly to the changed topography. A veritable pseudarthrosis is formed between the surface of the tibia and fibula and the cuboid. He considers this the operation of choice, especially in very young infants, and all forms of congenital club-foot, except some rare cases of incomplete club-foot, in which conservative tarsectomy will do. CHIFOLIAU.

**Jones, R.: The Surgical Treatment of Infantile Paralysis.** *Clin. J.*, 1914, xliii, 353. By Surg., Gynec. & Obst.

Early treatment should be by rest, including fixation in some cases to limit irritation of the inflamed areas and to avoid faulty postures with resulting deformities, followed by massage and careful muscle training, always having in mind that the muscle fibers are delicate and easily injured by rough massage or stretching. After a year of appropriate treatment it may be assumed that function has returned to all muscles that will ever recover.

Operative treatment should keep within the limits set by experience, which shows that muscle-stretching causes quite as serious deformity as paralysis,



and care should always be taken to keep up proper muscle tension, avoiding stretching with its resulting impairment of function and relaxation, producing faulty mechanical action with delayed recovery of function.

Jones emphasizes the fact that not only nerve-but muscle-tissue is involved, as in cases of "drunkard's palsy" which may be due to muscle-stretching without involvement of the musculospiral nerve, and the whole nerve muscle unit must be considered. These principles apply also to transplanted muscles, which must be placed in correct mechanical advantage, and not made to contract against too great resistance.

He considers electricity of less advantage in treatment than massage, correct posture, and exercise; and cites cases in which cure followed the complete relaxation of overstretched muscles, by fixing the part in position of contraction of opposing muscles, thus securing diminished tension on the weakened muscle tissue, which immediately showed marked trophic development.

Arthrodesis and tendon-transplantation are not to be considered early in life, before the patient can understand the situation for himself — and, never, until deformities have been corrected for at least two weeks. Such correction can be accomplished by manipulation, tenotomies, fixations, and extensions, and, more rarely, by osteotomies. Muscle-transplantation aims at the restoration of balance, and careful study should precede operation to avoid the substitution of a new abnormal condition for an existing one. Unless a muscle is able to be of functional use it is useless to transplant it, though its tendon may be used as a stay ligament in cases where silk has sometimes been used, by anchoring it in the periosteum, as, for instance, in the external malleolus to correct varus deformities.

Nerve-transposition is discussed and hope expressed that better results may follow soon from our better understanding of nerve physiology, particularly the work of Stoffel on the topography of the cross section of nerves, which may give a better basis for the accurate suturing of fibers carrying impulses in the same direction. C. E. WELLS.

**Davis, G. G.: Lumbosacral Pains, from an Orthopedic Standpoint.** *Therap. Gaz.*, 1914, xxxviii, 381.  
By Surg., Gynec. & Obst.

The author, discussing pain and its causes in the lumbosacral region, states that while it is a desirable

thing to be able to demonstrate the origin and cause of clinical phenomena, it is not always possible to do so. He states that it is a fact that there occur, in certain cases, symptoms which are referred to the region of the sacro-iliac joint.

It is not evident to what extent these symptoms may be due to the involvement of the surrounding structures, such as fibrous tissues and fascia, and to the adjacent lumbar and lumbosacral and even hip-joints, but it is probable that they are more or less interlaced.

The existence of distinct lesions having their main seat in the sacro-iliac joint has been practically accepted as a fact.

The history is given of a case which the author believes was a clear case of sacro-iliac relaxation.

He states that other cases with the pain low down in the back give no evidence of sacro-iliac relaxation, but that when the complaint is localized in the region of the sacro-iliac joint, for clinical purposes, it is wise to consider that part affected and direct measures accordingly.

These troubles low down in the back, he states, are also caused by traumatism, and cramped or unusual attitudes. In addition he states there may be a true osteo-arthritis process, and a condition which he called a rheumatoid gouty arthritic diathesis, as the cause of the trouble.

He considers support, fixation, and rest the best remedies. Drawings of a number of different belts and appliances used in the treatment are shown.

JAMES O. WALLACE.

**Biesalski, K.: New Apparatus** (Technische Neuerungen). *Zentralbl. f. chir. u. mech. Orthop.*, 1914, viii, 54. By *Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.*

In the after-treatment of club-foot, transplanted tendons, etc., Biesalski makes use of a simple apparatus that can be used at home and that insures a pronating and supinating movement of the foot. It consists essentially of two plates that can be tilted by means of springs, and it can be arranged as desired for the treatment of club-foot or flat-foot. In fixed flat-foot it is recommended that a hot-air treatment be used in conjunction with the apparatus. He describes a night splint for club-foot which corrects all three pathological movements. For mild cases of pes equinus he uses a thigh splint with a shoe, which can be held in dorsal flexion by a spiral spring acting on the ankle-joint. DUNCKER.

## SURGERY OF THE SPINAL COLUMN AND CORD

**Roth, R. E.: School Postures and Spinal Deformities.** *Australas. M. Gaz.*, 1914, xxxv, 521.  
By Surg., Gynec. & Obst.

Ninety per cent of the spinal deformities are developed between the ages of six and twenty. Lateral curvature is rare among the uncivilized, while it is common among the civilized. As the

infant progresses from the crawling to the erect posture, he develops the physiological curves of the body and at the same time develops the muscles of the back to maintain the erect posture. The uncivilized nations exercise the spine by carrying burdens on the head and also by sitting on the ground instead of on chairs. Children would



probably be benefited if they did not use chairs until they were eight years old.

Of 19,066 school boys, 4.1 per cent were found to be scoliotic and of 13,356 school girls, 5.8 per cent were scoliotic.

Scoliosis is always accompanied by rotation, and at times is also combined with varying amounts of lordosis and kyphosis. The erect position is maintained by the opposing action of the spinal muscles. If one set of muscles is stronger than the other there will be a curve.

The school postures of sitting, standing, writing, besides the school games which exercise only one side of the body, are largely responsible for the prevalence of scoliosis.

The long axis of the trunk is at right angles to the axis of the hips and shoulders. If the pelvis is tilted by a short leg or from some other cause, the spine will tilt to that side. The spine curves up to restore equilibrium; as a result, the opposite shoulder will be lowered. A similar condition may be brought about by faulty habits of standing, and also by interfering with the equilibrium of the body, as in carrying schoolbooks.

In sitting, the equilibrium of the body can be maintained only when the center of gravity is directly over the hip-joint axis. If the center of gravity is before or behind this point, there is constant muscle effort resulting in fatigue and the assumption of faulty posture.

A foot-rail at a suitable distance allowing the knee to be bent at one and one-half right angles will tend to keep the pelvis up without effort. Every chair, at least those for children during the time of their education and growth, requires a properly constructed back to support the spine. The support of the lumbar spine relieves fatigue and prevents faulty attitude. The support should be placed to allow the center of gravity to fall just behind the hip-joint axis. A seat without a back, or with a badly constructed back, causes round shoulders and humped back, with their concomitant evils. The depth of the seat must be such as to allow of flexing the knees while the child is using the back rest.

In writing, the light should come from the left. The desk top should overlap the seat so that the child may write without bending forward. The height of the desk should be such that when the child sits erect, both elbows can rest over the edge. The inclination of the desk should be about thirty degrees. The writing paper should be placed obliquely on the desk, so that when the right hand is in position the right forearm will be parallel to the right and left edges of the paper. The child will then sit erect without any muscular effort; there will be no twisting of the spine or advancing of the left shoulder.

A bad writing posture always predisposes to lateral curvature of the spine, with marked rotation.

It is most important that educational authorities pay more attention to the fact that spinal curva-

tures are generally developed during school life, and that they can be prevented easily.

ARCHER O'REILLY.

**Leriche, R.: Technique of Laminectomy and Radicotomy from Seventeen Cases** (Sur la technique de la laminectomie et de la radicotomie d'après dix-sept observations). *Lyon Chir.*, 1914, xi, 407.

By Journal de Chirurgie.

After having performed 17 laminectomies Leriche thinks that operations on the nerve-roots and the cord are not difficult if not done by the extradural method, which causes troublesome hæmorrhage. He operates under ether anæsthesia after disinfection with tincture of iodine, with the head slightly lowered. The exploration is made by the classical methods, to which radiographic examination of the vertebræ is added when absolute precision is necessary. The incision is made just to one side of the median line, as Ollier directs; then he dissects the muscles with the rugine, but the dissection is subperiosteal in name only.

Hæmostasis is accomplished by pressure by placing tampons in the musculospinal groove. The spinous processes are then removed with the gouge forceps and the medullary canal opened, either with the forceps or with the aid of a Doyen's bit. If a vein bleeds, the bleeding may be stopped with the aid of a bit of muscle. Then the dura mater held with two Tuffier forceps is incised with a bistouri. Generally the arachnoid is opened at a second stage.

After the radicotomy, or operation on the cord, has been accomplished, Leriche sutures the dura mater with small curved needles and  $\infty$  catgut, with sutures as near together as possible. This being finished there is a large dead space, corresponding to the laminae and spinous processes that have been removed. He fills it with a muscle-flap with the flesh inside against the dura mater. Then the muscles are sutured in several layers. No drainage is used. He had a mortality of 10 per cent. He finds that the results in inflammation of the nerve-roots, tabetic or not, is not stable, but that in neuralgia from pressure of the roots by tumors it is excellent. In spasmodic paralysis he thinks Förster's operation is the operation of choice.

**Adams, Z. B.: Causes and Treatment of Scoliosis.**

*Am. J. Orth. Surg.*, 1914, xi, No. 4.

By Surg., Gynec. & Obst.

Adams believes scoliosis is due to some congenital deformity of the sacrum or the fifth lumbar vertebræ,—as failure of fusion of a superior or inferior articular process, or pedicle to the vertebral body, or overgrowth or undergrowth of bone causing tilting or rotation of the lumbosacral articulation with a resultant curving in the thoracic and lumbar regions from the effort to maintain an equilibrium upon an unstable base. Rotation of sacral segments before fusion has taken place is also given as a cause. He believes correction of deformity should be by operation.

H. W. MALTBY.



**Schanz, A.: Concerning the Treatment of Scoliosis.**  
*Am. J. Orth. Surg.*, 1914, xi, 570.

By Surg., Gynec. & Obst.

The author considers that the problem of scoliosis "has shown itself to be the most difficult to solve of all that have ever beset our science and our art." In the history of the treatment of scoliosis there is a peculiar activity in experimenting, and blunt contradictions among writers on the subject. In the discussion and classification of scoliosis, it is necessary to get rid of the symptomatological viewpoint and come to the etiological.

All real scolioses show lateral curvature of the spine with principal and counter curvatures, cultivation of wedge-shaped and oblique vertebræ, and torsion. The origin of real scoliosis lies in the misproportion of the load to the strength of the weight-bearing column. The torsion is explained by the fact that the overloading is felt at different points of the cross section of the column, at different times.

In the treatment there are two things to be accomplished; i. e., to restore the equilibrium of the spinal column and to restore its normal skeletal form. Gymnastics are to be used in selected cases only, for there are cases in which the condition is not benefited but aggravated by this form of treatment. Patients who seem to have been originally strong and who have no pain or sensitiveness in the spine may be given gymnastic treatment without fear of harm, but others should not. As a means of correction of the skeletal deformity, however, it is the author's conviction that gymnastics are absolutely useless.

Apparatus for support should be accompanied by some measure, such as massage or exercise, to prevent the atrophy of inactivity. For restoring the normal skeletal form, mechanical apparatus is the only available means. Fundamentally, any such apparatus should consist of two parts — a fixation part and an active corrective part. The older methods of portable corrective apparatus have been tried by the author and abandoned for the plaster jacket method. After eight to fourteen days he applies the plaster with the patient suspended in extension of the spine. Preparatory treatment consists of normal rectifications and stationary apparatus to make the spine mobile, no windows are cut over the

concavities, nor are pads inserted to produce corrective pressure. After the removal of the jacket the patient is kept recumbent and only gradually allowed to be up with support. The results are sometimes disappointing, the original deformity returning.

In the author's opinion, complete correction of the scoliosis deformity is impossible. He regards the results obtained by Abbott as deformations of the thorax simulating correction, and not as actual correction of the spinal deformity. He deplores the fact that the causes of the disturbed equilibrium in constitutional scoliosis are not known, and, therefore, we do not know how to prevent or cure it. An appeal is made to pathology, whence the next word must come.

W. A. CLARK.

**Sever, J. W.: Report of the Scoliosis Clinic of the Children's Hospital, Boston.** *N. Y. M. J.*, 1914, xcix, 1217.

By Surg., Gynec. & Obst.

The author reports the work of the clinic for the ten years ending in June, 1913. Postural deformities and deformities of the thorax are included, as well as physiological and structural scoliosis. A total of 146 cases of postural deformities, such as round shoulders and hollow back, were treated with "setting up" exercises. The physiological scolioses were treated with daily exercises, braces and jackets being contra-indicated. The prognosis in such cases — complete cures with rotation to the concavity — was good. The total number of cases treated was 295.

The moderate types of structural scoliosis are treated with removable jackets made over corrected torsos, with or without exercises. These are worn at least two years, the jackets being remade about every six weeks. The severe structural cases are treated mostly by the head suspension method.

The flexion method, with application of rotary force and side pull, as devised by Abbott and by Forbes, seem in the author's opinion to be distinctly wrong in principle; results obtained by these methods have been disappointing and have no advantage over the older suspension method. In fact it has been shown by Lovett that rotation of the spine is best accomplished in extension, and it has not been shown that flexion unlocks the articular processes, as has been claimed.

W. A. CLARK.

## SURGERY OF THE NERVOUS SYSTEM

**De Beule, F.: Two Cases of Förster-Van Gehuchten's Operation for Little's Disease** (Deux cas d'opération de Förster-Van Gehuchten pour maladie de Little). *Ann. Soc. belge de chir.*, Brux., 1914, xxii, 46.

By Journal de Chirurgie.

De Beule used Van Gehuchten's modification of Förster's operation on two little girls, ten years of age, who had Little's disease.

In the first case, the lower limbs were in hyperextension, the foot forming a direct continuation of

the axis of the leg; flexion of the hip, knee, and foot was impossible; walking was totally impossible and the child could seat herself only with great difficulty. There was clonus of the knee and ankle, and Babinski's sign on both sides. Operation was performed under ether anæsthesia. It consisted of resection of the last dorsal and first two lumbar vertebræ; incision of the dura mater, and laying bare of the sensory roots. Three bundles of the root-fibers were isolated and resected. The dura mater was

closed with fine catgut, the muscles and skin were sutured, and a large occlusion dressing applied. Recovery was uneventful. A few drops of cerebrospinal fluid were discharged the first two days. There was a marked and progressive decrease in the spasticity of the lower limbs. At present she goes to school. Her walking is not perfect: there is a certain degree of spasticity and the feet turn inward. When she rises she stands at first on her toes, but in a few minutes the heels are lowered. Knee and ankle-clonus and Babinski's sign persist.

The second case was a mild one. Active and passive movements of the limbs could be performed; spasticity was shown only on walking. For the past few months there had been progressive increase in the difficulty. Ankle-clonus and Babinski's sign were present. The last two dorsal and

first two lumbar vertebræ were resected; three bundles of root-fibers were resected on the right. On the left the fibers were lifted one by one on a blunt hook and every other one was cut. The recovery was afebrile. There was no discharge of cerebrospinal fluid. The result was perfect. The child now walks normally. There is no ankle-clonus, but Babinski's sign persists.

The author gives some details of the technique of radicotomy. The nerve-roots must be handled with great care, for they are very fragile. They should never be seized with forceps, which crush them, but should be handled with small blunt hooks. The dura mater should be sutured with a very fine needle and the sutures placed very close together; otherwise there will be escape of cerebrospinal fluid and danger of infection. J. DUMONT.

## MISCELLANEOUS

### CLINICAL ENTITIES — TUMORS, ULCERS, ABSCESES, ETC.

**Rous, P.: Certain Spontaneous Chicken Tumors as Manifestations of a Single Disease; Spindle-Celled Sarcomata Rifted with Blood Sinuses.**  
*J. Exp. Med.*, 1914, xix, 570.

By Surg., Gynec. & Obst.

Recently three transplantable chicken tumors, distinct in character, have been found by Rous to have a filterable cause. The differences between these tumors are traceable to differences in the causative agents. Each agent gives rise in normal fowls to tumors of the sort from which it was isolated by filtration: For example, the agent derived from a transplantable osteochondrosarcoma gives rise to sarcomatous tumors in which cartilage and bone are laid down. Certain minor variations have been found to occur in each tumor strain as intercurrent phenomena; as, for instance, the cells of the sarcoma known in the laboratory of the Rockefeller Institute as chicken tumor No. 1 are, in some chickens, of very attenuated spindle form, in others oat-shaped or almost round, in others interspersed with sarcomatous giant-cells. The course of the disease varies in individual fowls, but Rous found the growth to be always a spindle-celled sarcoma, and its modifications to be not greater than those observed in certain rat and mouse tumors, propagated only by transplantation and dependent on the survival of a single race of cells.

Attempts to bring about variations by injuring the filterable agent have been unsuccessful, as have attempts to make it affect epithelium. Rous believes that there is good reason to suppose that other tumors of the fowl besides those already studied are caused by filterable agents. The range in structure and behavior among chicken tumors is very wide. Even when composed of cells of similar origin they, like mammalian growths, often exhibit a strikingly varied structure and course.

The author has found that two spontaneous chicken tumors recently transplanted have each given rise to neoplasms identical in composite behavior with a tumor strain already under propagation. As shown in the present paper, the spontaneous tumor known as chicken tumor No. 38 of the author's series, seems to be a manifestation of a disease-complex already reported upon and known as chicken tumor No. 18. This latter growth is a spindle-celled sarcoma, rifted in a characteristic manner with blood sinuses and tending to metastasize to the muscles, especially in the neighborhood of joints.

This very significant article of Rous' may be briefly summarized as follows:

That chicken tumors of markedly different type have different filterable agents as their cause has been proved by experiments already reported. The present findings make it probable that, within certain limits, tumors of rather various character may be dependent upon a single agent. This assumption greatly simplifies the etiological problem. But the truth of the assumption for other instances than those described in the present article can only be determined by the study and comparison in many hosts of the disease-complexes of which each spontaneous chicken tumor is to be considered as an individual expression. GEORGE E. BEILBY.

**Lange, L. B.: Certain Spontaneous Chicken Tumors as Manifestations of a Single Disease; Simple Spindle-Celled Sarcomata.** *J. Exp. Med.*, 1914, xix, 577. By Surg., Gynec. & Obst.

Among the spontaneous chicken tumors which the author of this article recently studied in the laboratory of the Rockefeller Institute there were two spindle-celled sarcomata that yielded, on transplantation, neoplasms similar respectively to two strains already under propagation. The resemblances of the growths derived from chicken



tumor No. 38 to those derived from chicken tumor No. 18 were taken up by Rous in the preceding article. The subject of the present paper is chicken tumor No. 43, a simple spindle-celled sarcoma, apparently identical with chicken tumor No. 1. The spontaneous tumor No. 38 differed considerably, the author found, from the spontaneous tumor No. 18, and only after the growths had been observed in many hosts was their close similarity recognized. Tumor No. 43, on the other hand, in its original form strikingly suggested tumor No. 1, and the transplantation growths were practically identical with those of the latter — both were produced by a filterable agent. Lange shows that the forty-third spontaneous chicken tumor received at the Laboratory of the Rockefeller Institute strikingly resembled the first, and that it gave rise, on transplantation, to an entirely similar series of neoplasms. Tumors of both strains are due to a filterable agent which remains active in the dried or glycerinated tissue.

GEORGE E. BEILBY.

**Mayo, W. J.: The Prophylaxis of Cancer.** *Ann. Surg., Phila.*, 1914, lix, 805.

By Surg., Gynec. & Obst.

Mayo states that all vertebrate animals suffer from cancer in situations affected by their habits or conditions of life, leading to local lesions in the protective mechanism. He believes that local lesions should be looked upon as an invitation to cancer without regard to just what the actual cause of cancer may be. The term precancerous should be limited to those conditions which clinically and microscopically cannot be said to be surely benign or surely malignant. The character of the cells are changed; they lack differentiation, but as yet there is no infiltration of the surrounding tissue. This cellular change is found in the periphery of malignant growths and in conditions which have later developed malignancy. The local lesion is the invitation and the precancerous condition the probable acceptance.

He divides the sites of local irritation into three groups: (1) congenital or acquired neoplasms, such as moles, warts, and benign tumors which may undergo malignancy; (2) trauma, which strongly influences not only the development of sarcoma but of carcinoma; (3) chronic irritation, which he considers the most important of all the precancerous conditions whether the result of mechanical, chemical, or infectious agencies. Among the many examples cited are: the development of cancer in the mouth from betel nut irritation in India, amounting to nearly half of all the epithelial cancers of the country; the development of cancer in local lesions produced by heat, as cancer of the lip from smoking, the "Kangri" sores following burns which form more than 50 per cent of all cancers in Kashmir; those cancers on the shins of locomotive drivers who have been exposed for years to the direct action of heat; cancers following chronic irritation due to different forms of radiant energy, X-ray, etc.; cancers follow-

ing the local lesions due to infections, such as bilharzia of the bladder, treponoma pallidum in keratosis linguæ, nematodes in testicular tumors in horses and in gastric cancer of rats; and the "horn-core" cancer of cattle, due to the irritation of the ropes through the horns with which cattle pull their loads. If the betel nut were not used in India and the Kangri basket in Kashmir, the cancers in these two countries would be reduced one-half.

The author then calls attention to the importance of applying the evidences of local chronic irritation in the production of cancer to the solution of problems in regard to the development of cancers on the internal mucous surfaces of the body. For example, cancer of the gall-bladder from gall-stone irritations and cancer of the stomach following gastric ulcer. Fifty per cent of cancers of the pelvis of the kidney are demonstrably superimposed on extensive renal calculi formation. Carcinoma of the appendix usually occurs in association with chronic obliterative processes. In the sigmoid and rectum, the irritation in diverticula may have given rise to malignant disease. Cancer of the stomach occurs in 30 per cent of all cancers in civilized man, but is not common in primitive races or in lower animals. When cancer of a certain organ is found in only one class of individuals or one species, it means a single cause, such as betel nut cancer and Kangri cancers. Cancer of the stomach must be due to one cause; if many, the lower animals and primitive races would be more often affected. Something in the habits and customs of civilized man in connection with the cooking and preparation of food must be responsible for this large percentage of cancer of the stomach. A comparative investigation would be of value.

In conclusion he says: "I would again call attention to the fact that preëxisting lesions play the most important part of the known factors which surround the development of cancer; that such precancerous lesions are produced by some habit or life condition which causes chronic irritation; that where cancer in the human is frequent a close study of the habits of civilized man as contrasted with primitive races and lower animals, where similar lesions are conspicuously rare, may be of value; and finally, that the prophylaxis of cancer depends, first, on the change in those cancer-producing habits, and second, on the early removal of all precancerous lesions and sources of chronic irritation."

**Losee, J. R. and Ebeling, A. H.: The Cultivation of Human Tissue in Vitro.** *J. Exp. Med.*, 1914, xix, 593.

By Surg., Gynec. & Obst.

The present investigations were undertaken to ascertain whether human connective tissue taken from a fresh cadaver could be kept in a condition of permanent life outside of the organism. The authors applied to human tissues the method by which Carrel was able to keep animal connective tissue alive *in vitro* for more than two years. The experiments by Carrel and Burrows demonstrated that when small fragments of human malignant



tumors were placed in human plasma and incubated, the fragments, in a few days, were surrounded by many cells; but that generally liquefaction of the medium occurred and no growth was observed. In other experiments undertaken on normal tissues the same phenomenon was observed. Therefore, the authors, in this instance, attempted to develop a technique which would permit them to keep human tissue in a plasmatic medium without the occurrence of liquefaction. At first they attempted to obtain a medium that would not liquefy under the influence of the tissue. The first medium made use of was human plasma and extract of human tissue taken from fresh cadavers. This, however, proved unsuitable, as liquefaction occurred about the fragments of tissue in 24 hours. Many modifications of the medium were tried in order to overcome these difficulties. Finally, after many attempts had been made, it was found that by diluting the plasma with equal parts of Ringer's solution a medium could be obtained which would not liquefy in less than 24 hours and often not in 48 and 72 hours. Usually 18 hours after the medium had been inoculated with human tissue, growth appeared and increased progressively. After a period of from 24 to 96 hours the fragments of tissue were transferred to a fresh medium in which the growth continued. The medium was again modified by the addition of a small quantity of diluted extract of human tissue, after which the growth became very active.

Finally, after continued experiments, the authors found it possible to obtain large growths of human connective tissue. They could transfer this tissue from medium to medium. They, therefore, demonstrated that it was possible to keep a strain of human connective tissue in a condition of active life *in vitro*, for more than two months. They believe that when a medium has been devised, the composition of which is more constant, human connective tissue can be cultivated *in vitro* for an indefinite period.

GEORGE E. BEILBY.

#### SERA, VACCINES, AND FERMENTS

**Irons, E. E.: The Treatment of Tetanus by Antitoxin.** *J. Am. M. Ass.*, 1914, lxii, 2025.

By Surg., Gynec. & Obst.

The author reports a series of 225 cases collected mainly from large hospitals in the United States and Canada. The mortality of all treated cases was 61.77 per cent, while in cases without serum the mortality was 85.7 per cent. From the review of the cases the author points out the necessity of combating not only the toxin which has reached the circulation, but also the toxin which has already reached the central nervous system. To remedy the first condition an immediate dose of antitoxin given intravenously is indicated, and for the second condition, an immediate intraspinal dose. Further injections will be necessary on succeeding days.

The conclusions reached by the author are as follows:

1. From these statistics it appears that the mortality of tetanus treated by tetanus antitoxin is about 20 per cent lower than the average mortality of tetanus treated without serum.

2. The mortality of cases treated by efficient methods and adequate dose is considerably lower than that of cases receiving small doses subcutaneously.

The author appends the following outline for the treatment of tetanus: The prophylactic treatment by antitoxin is established. In a case where symptoms have appeared, an immediate injection of 10,000 to 20,000 units of antitoxin should be given intravenously, and 3,000 units intraspinaly. On the following day the intraspinal injection of 3,000 units should be repeated. On the fourth or fifth day 10,000 units should be given subcutaneously to maintain the antitoxin content of the blood. In addition to this serum treatment the ordinary treatment by sedatives, methods to aid elimination, and the surgical treatment of the site of the infection should be instituted.

J. H. SKILES.

**Falls, F. H. and Welker, W. H.: Appearance of Non-Colloidal Ninhydrin-Reacting Substances in the Urine.** *J. Am. M. Ass.*, 1914, lxii, 1800.

By Surg., Gynec. & Obst.

The authors used the following method in testing urine: Ten ccm. of urine were mixed with an equal volume of aluminum hydroxide cream and the mixture was shaken and filtered. Ten ccm. of the filtrate were treated with 0.2 ccm. of a one per cent ninhydrin solution and heated on a Shaddock burner for exactly one minute after boiling had begun. The depth of color was observed and noted after the tubes had been standing for half an hour at room temperature. In all the samples containing albumin, the filtrate from the aluminum treatment was tested by means of the heat coagulation or Heller's ring test, in order to be certain that sufficient aluminum hydroxide had been used to remove all the albumin. They reached the following conclusions:

1. The presence of non-colloidal ninhydrin-reacting substances in urine is of no value as a means of diagnosing pregnancy.

2. The reaction may be absent or inhibited in the urine of pregnant women as well as in normal and pathologic urine.

3. In the various urines treated, the only difference noted in the ninhydrin reaction between the diffusates through parchment and the filtrates from the aluminum treatment was in the intensity of colors, the aluminum filtrates showing a less intense color with ninhydrin.

4. In the urines reacting positively with ninhydrin, the removal of colloidal substances favors the production of the blue color given by this reagent with amino-acids. Such urines, before diffusion or treatment with aluminum hydroxide, give a color which is not so strong and has more of a reddish cast. This is not the result of the dilution alone.



5. The occurrence of either albumin or indican appears to have no influence on the ninhydrin reaction applied to the colloidal-free urine.

EDWARD L. CORNELL.

### BLOOD

**Lespinasse, V. D.: The Treatment of Hæmorrhagic Disease of the New-Born by Direct Transfusion of Blood; with a Clinical Report of Fourteen Cases.** *J. Am. M. Ass.*, 1914, lxii, 1866.

By Surg., Gynec. & Obst.

The author reports fifteen cases of hæmorrhagic disease of the new-born treated by direct transfusion of blood. The results in the fifteen cases were excellent: the hæmorrhages stopped at once in all of them and all recovered, so far as the hæmorrhages were concerned. Two babies subsequently died of syphilis.

The amount of blood transfused into the baby varies from approximately 100 ccm. to 425 ccm. In performing the operation great care should be taken that the blood does not flow into the baby too fast, as it would be liable to produce an acute dilatation of the heart. The donor is usually the father.

The duration of blood flow is approximately five minutes. One of the babies was practically brought back to life. Its heart could not be heard for several minutes before the blood was allowed to flow, but the fresh blood started its heart again and it made an uneventful recovery.

The author draws the following conclusions:

1. Direct transfusion of blood stops the bleeding and restores the lost blood.
2. Direct transfusion of blood has cured where all other methods have failed.
3. Direct transfusion of blood should be used early; but so long as there is a spark of life evident, it is not too late for transfusion.

### BLOOD AND LYMPH VESSELS

**Stybel, W.: Arteriovenous Aneurism of the Common Carotid and Internal Jugular** (Aneurysma arterio-venosum der Carotis communis und jugularis interna). *Dissertation*, München, 1913.

By Journal de Chirurgie.

After a general discussion of the statistics and surgery of aneurisms the author describes a case operated on by Gebele. It was a spontaneous arteriovenous aneurism of the common carotid and internal jugular. The 29-year-old patient had catarrh of the apex in 1900 and shortly afterward noted a small tumor in the middle of the right side of the neck. It was regarded as a gland and treated with iodine. She became emaciated, was troubled with dizziness, fainting, cough, and difficulty in breathing. Aneurism was recognized at the München Surgical clinic. There was a pulsating tumor apparently consisting of two parts, round and the size of a dove's egg, under the sternocleidomastoid. No improvement followed the application of ice and

gray salve; on the contrary it grew larger. Operation was refused and she was discharged.

In 1904 the tumor began to grow rapidly and in 1905 it was operated on (Klausner). The right common carotid was ligated and for a year there was loss of voice and continuance of symptoms, but in 1907 there was return of the voice and improvement. In 1912 it grew markedly worse. Wassermann test was negative. On examination Gebele found a tumor on the right side of the neck as large as a man's fist, passing upward into the submaxillary region without sharply defined boundaries and extending downward to the clavicle and to the jugular. It was a pulsating tumor fixed to the underlying tissues. The larynx and trachea were displaced to the left. The circumference of the neck over the tumor was 40 cm. There were technical difficulties in laying bare the vessels. Forty ccm. of gelatine was injected subcutaneously. It was well borne and the injection was repeated. The tumor decreased 2 to 3 cm. The hereditary origin is noteworthy.

FRITZ LOEB.

**Gilson-Hermann: Arteriovenous Aneurism of the Internal Carotid and the Internal Jugular** (Anéurisme artérioso-veineux de la carotide interne et de la jugulaire interne). *J. de chir. belge*, 1914, xiv, 71.  
By Journal de Chirurgie.

The author had occasion to operate for an arteriovenous aneurism of the internal carotid and the internal jugular in a man of 48, following a gunshot injury in the region of the left carotid. The accident was followed immediately by a serious hæmorrhage, then by the formation of a large hæmatoma; it was not until two months later that the symptoms of aneurism appeared suddenly. A diagnosis of aneurism of the internal jugular and internal carotid was made and confirmed on operation. The separation of the internal jugular and internal carotid was impossible on account of adhesions to each other and to the neighboring tissues; so it was decided, after carefully dissecting the pneumogastric and the descending branch of the hypoglossal, to ligate the common carotid and the internal jugular. The orifice of communication was found. A large drain was placed in the lower part of the wound and it was sutured. The next day the patient had no symptoms, his temperature and pulse were normal, and he was able to read his paper in bed. The drain was removed on the fifth day, the sutures on the eighth, and he left the hospital completely well on the twelfth.

Such aneurisms are rare and almost always of traumatic origin. The mortality is high,—6 out of 7 cases,—not so much on account of the difficulty of the operation, but because ligation of the common carotid is often followed by fatal cerebral symptoms, such as convulsions, coma, and cachexia. The author tried to determine the cause of these cerebral disturbances following ligation of the common carotid. He injected the corpses of new-born infants with Leichmann's fluid after having ligated the



common carotid and found that no facial or cerebral area was deprived of its blood supply. He thinks the mechanism which produces the trouble is as follows: When the common carotid is ligated, the distal extremity of the ligated artery is temporarily deprived of blood. The artery, being very, elastic contracts, drives a part of the blood in it into the collaterals, and then dilates. At this time in this part of the carotid, negative pressure is produced. The blood reaches the circle of Willis through the basilar and posterior communicating arteries. At this moment a veritable flood of blood enters the internal carotid. When the collateral circulation is established a great quantity of blood reaches the external carotid through the superior and inferior thyroids, and increases the engorgement already existing in the common carotid. This abnormal volume of circulation, he thinks, detaches a clot and causes fatal embolism. Embolism is the most frequent complication and generally takes place a number of hours after the ligation. More experiments should be performed to determine the truth of this hypothesis.

J. DUMONT.

**Moorhead, T. G.: Treatment of Lymphosarcoma by Benzol.** *Med. Press & Circ.*, 1914, cxlviii, 654.  
By Surg., Gynec. & Obst.

The author gives a preliminary report of one case of lymphosarcoma treated by benzol. The patient came to the hospital complaining of a cough, difficulty in breathing, and a swelling on the right side of the neck. The examination showed marked swelling of a group of glands on the right side of the neck and a similar but smaller swelling on the left side. There was distinct dullness on percussion over the manubrium sterni and the cardiac dullness was increased. An X-ray examination showed the presence of a large opaque mass filling up the greater part of the superior mediastinum and apparently extending down on each side of the pericardium. The spleen was palpable but not tender. White cells numbered 11,200 per cmm. The Wassermann test was negative.

A diagnosis of lymphosarcoma was made and it was determined to try benzol. A drachm of the drug was given at first but the dose was rapidly increased until five drachms daily were given. X-ray exposures were given twice weekly.

The result up to the present is as follows: The glands in the neck have almost completely disappeared, the dullness over the manubrium sterni has gone, and the cough and huskiness have been much lessened. The patient sleeps now without trouble and in every way feels much better. The author hopes to publish a more complete report later on.

JAS. H. SKILES.

**Bunting, C. H.: Hodgkin's Disease.** *Bull. Johns Hopkins Hosp.*, 1914, xxv, 177.

By Surg., Gynec. & Obst.

Bunting's interest in Hodgkin's disease dates from a series of experiments performed in the

laboratory of Flexner at the University of Pennsylvania in 1903. His experiments at this time led him to develop a working theory as to the pathogenesis of Hodgkin's disease, which he still holds, though in a modified form.

His conception of the disease was that the changes in the lymph-glands were due to the filtration through them of a toxin elaborated at some primary focus of infection, and were, in consequence, entirely of a secondary nature—an end-result. In brief, he believes that in Hodgkin's disease there is a primary group of glands which, for a considerable length of time, protects the body from the toxin elaborated by the infectious agent.

The author studied the material from twenty-eight cases of Hodgkin's disease, and a study of these cases from a pathological standpoint has strengthened his conviction that the lesion of Hodgkin's disease is essentially of inflammatory nature.

In summarizing, the author holds that Hodgkin's disease is an infectious disease due to a diphtheroid organism, the bacterium *Hodgkini*. A primary lesion may often be found at the portal of entry. While, in some cases, the organisms may remain for a long time localized in the vicinity of the portal of entry, in other cases, they early gain entrance into the general circulation, and may be widely distributed. The organism and its toxin show a special affinity for lymphoid tissue, and produce in this the characteristic changes of Hodgkin's disease, changes varying somewhat according to the intensity of the toxin, but resulting ultimately in the sclerosis of the glands. There is, at the same time, an interglandular inflammatory process, at times very acute, but resulting finally in a dense sclerotic tissue. There are also characteristic blood changes in the disease.

The glandular changes can then be considered only as the result of a toxic action, and contribute to the patient's death merely incidentally, when certain gland groups are extensively enlarged. The cells of the enlarged glands, though atypical, show none of the antagonism to the other body cells characteristic of malignant neoplasms.

GEORGE E. BEILBY.

**Bunting, C. H.: The Blood-Picture in Hodgkin's Disease.** *Bull. Johns Hopkins Hosp.*, 1914, xxv, 173.

By Surg., Gynec. & Obst.

Bunting has been able to study the blood-picture in twenty-five cases of Hodgkin's disease, in which the diagnosis had been established by the histological examination of a test gland. The study of the blood in these cases has shown that there is a deviation from the normal leukocytic picture in all cases, but that there is not a single constant picture found in them. Instead, it is possible to divide the cases into two distinct groups according to the differential count of the leukocytes.

The first group, including cases of a year or less in duration, shows a normal or slightly increased total leukocyte count with a normal or decreased percentage of polymorphonuclear neutrophils.



The second group includes the cases of greater duration for the most part, and shows a sharp leukocytosis, running in one case (as far as could be determined from the smear ratio of 1 white cell to 29 red cells) to at least 100,000 leukocytes per cmm. This leukocytosis is accompanied by an increase of the neutrophils to a percentage between 72 and 90 — a percentage ordinarily considered of value in diagnosing a suppurative process in the body, yet occurring in Hodgkin's disease in the complete absence of pus formation.

Throughout the disease there are two constant features, an increase in blood-platelets and an absolute increase in the transitional leukocytes. In regard to the other elements, in early cases there is a transitory increase in lymphocytes and basophils, and a deficiency in eosinophils with a normal or low neutrophil count, followed by a gradual decrease in lymphocytes and a moderate eosinophilia. In late cases there is a marked neutrophile leukocytosis and a diminution in percentage of all other elements except the transitional leukocyte.

GEORGE E. BEILBY.

**Yates, J. L.: A Clinical Consideration of Hodgkin's Disease.** *Bull. Johns Hopkins Hosp.*, 1914, xxv, 180.  
By Surg., Gynec. & Obst.

Yates, like Bunting, believes that Hodgkin's disease may be considered an infectious, non-contagious affection, due to the bacterium Hodgkini. It is characterized by a somewhat variable, though definite, reaction in the lymphatic and perilymphatic structures, specific changes in the blood-picture, and by the manifestation of little or no tendency to spontaneous recovery.

It appears to the author that these cases clearly indicate that, primarily, Hodgkin's disease is a localized process, susceptible of cure when properly treated as a malign, though chronic, infection. It may persist for years without manifesting itself, save in the blood picture, so that cures may not be assumed until after an uninterrupted duration of years of persistently normal conditions.

A sovereign remedy for all cases is not now conceivable. At present, the greatest need is some therapeutic agency to control glands not directly accessible; for once extension, which may occur early, has reached either the thorax or abdomen the prognosis becomes relatively, if not absolutely, hopeless.

GEORGE E. BEILBY.

**Hamann, C. A.: Ligation of the Innominate Artery.** *Ann. Surg., Phila.*, 1914, lix, 962.  
By Surg., Gynec. & Obst.

On account of the infrequency of ligation of the innominate artery the author reports his case.

The case was that of a woman, aged sixty-eight, who first complained of pain and difficulty in using the right arm. Later, a pulsating swelling developed above the right clavicle about the size of a hen's egg. The only pathologic condition, aside from this, was a moderate grade of arteriosclerosis.

First an attempt was made to insert a fine silver wire into the sac about 8 inches—no improvement of the local condition resulted.

Ligation was next attempted. The incision was made along the anterior border of the sternocleidomastoid and along the upper border of the clavicle, forming a triangle exposing the deep structures of the neck. The aneurism involved the third part of the subclavian artery and extended under the scalenus anticus. The sternohyoid and sternothyroid were cut and about two inches of the clavicle resected, exposing the innominate artery. This vessel was ligated with a heavy silk ligature and found to be atheromatous. The common carotid was also tied with chromic gut.

The case recovered completely and no trace of the former aneurism could be felt. The radial pulse is absent.

The author has collected a total of 53 cases of ligation of the innominate artery, 14 of which were successful. In these cases gangrene was not noted in any, although disturbance of cerebral circulation occurred a number of times. The most common cause of death was secondary hæmorrhage; most of these occurred in pre-antiseptic days.

EUGENE CARY.

## ELECTROLOGY

**Heineke, H.: Theory of the Effect of Rays, Especially of the Latent Period** (Zur Theorie der Strahlenwirkung, insbesondere über die Latenzzeit). *München. med. Wchnschr.*, 1914, lxi, 807.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Hertwig's studies show that röntgen and radium rays have their chief effect on the nuclei of the cells, and especially on cell division, which takes place in a very abnormal way after irradiation. He explains the apparently slighter effect of larger doses by the fact that the capacity of the irradiated cells for division is destroyed. The nucleus of the irradiated cell loses its capacity for division, but keeps the capacity for fertilizing or being fertilized, and is not directly killed. The demonstration of this fact explains the puzzling latent period in irradiation.

As all normal and pathological cells of the animal body have a certain term of life, after which they die and disappear, if their capacity for reproduction is destroyed, a defect in the tissue must arise at the end of their physiological term of life. This is actually the case when the capacity of the cells for division is destroyed by irradiation. Just after the irradiation the cells appear normal; presently, however, they die with the histological picture of cell degeneration. Under these circumstances the effect of the irradiation must appear at the end of the latent period, the length of which corresponds to the length of life of the cells affected. The most characteristic manifestation of this is seen in the late ulcers which suddenly appear, sometimes months after the irradiation, on an apparently normal skin.

This inhibition of karyokinesis is the characteristic reaction of the cell to a certain moderate dosage of rays, which is different for each kind of cell. A smaller dose stimulates karyokinesis; a larger one not only inhibits it but kills the cell directly. This law explains only the most noteworthy phenomena of latency and does not hold good for the reaction of all cells to the rays. In some kinds of cells there is no latent period; for example, the nuclei of lymphocytes are destroyed almost immediately after irradiation and the reaction begins at the same time whatever the dosage. The differences in the sensitiveness of tumor cells to the rays is explained if we go back to the tissues from which the tumors originated and determine their quantitative and qualitative differences with regard to the action of rays.

K. HOFFMANN.

**Halban, J.: Protective Effect of Radium Emanations on the Secondary Sexual Characters of Tritons** (Protektive Wirkung der Radiumemanation auf die sekundären Sexualcharaktere der Tritonen). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 466. By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

Small doses of radium and röntgen rays have a stimulating effect, hastening the germination of sperm in certain species, causing parthenogenesis of unfertilized eggs, increased activity in the development of the entoderm in fertilized hens' eggs, etc. Larger doses have an inhibitory effect, inhibiting the growth of fertilized ova of *Bufo viridis* and Triton alpestris and killing growing mice and other plant and animal organisms. Radium, moreover, has a protective effect on the secondary sexual characters; for example, in male Tritons the crest, which develops in these animals at rutting time, develops to a much greater degree when the animals are kept in vessels and subjected to the action of a certain quantity of radium emanation. This crest can also be developed in male Tritons shortly before and after the rutting period. In female Tritons symptoms of rutting can be developed a long time before the rutting period; the yellow stripes on the back increase in size and become deeper in color. It is not yet decided whether the emanations act directly on the sexual characters, or whether they stimulate the sexual glands to greater activity, and that this acts secondarily on the sexual characters.

IMMELMANN.

**Hartung, A.: X-Ray Findings in the Normal Stomach.** *Surg., Gynec. & Obst.*, 1914, xviii, 757. By *Surg., Gynec. & Obst.*

After briefly mentioning the technique used in making röntgenologic examinations of the stomach, the author describes that organ as it appears at rest and in motion in apparently normal individuals. Due allowance being made for individual variations, such stomachs conform in shape either to the fish-hook or the cow-horn type first described by Rieder and Holzknacht respectively. Schlesinger, who classifies stomachs on the basis of their muscle tonus, calls the latter the hypertonic type and divides the other into orthotonic, hypotonic, and atonic types.

The position which the normal stomach occupies is essentially vertical or oblique although here also outside influences may induce marked variations. Size determinations are of little value, except in so far as it is possible to be able to ascertain how the stomach acts if definite amounts of the opaque meal are ingested. Normally, the stomach walls adapt themselves closely around its contents.

Attention is called to the multiplicity of names applied by different authors to the same parts of the stomach, and a greater uniformity of nomenclature is urged, based preferably on the anatomic divisions by Forsell. The stomach is described during the process of filling, mixing of its contents, and emptying. Mention is made of the peristalsis and sphincter action concerned in this process.

**Sellheim, H.: Irradiation of Tumors** (Strahlenbehandlung von Geschwülsten). *Deutsche med. Wchnschr.*, 1914, xl, 22. By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

This is a propaganda for the procuring of radium, in which the author reports the effect of röntgen and radium rays on living and tissues, both the superficial and deep effect. He gives the differences in penetrability of the different kinds of rays, the röntgen and gamma radium rays, and the effect of metal filters; the different degrees of sensitiveness of normal and pathological tissues, showing the destructive effect on the genital glands and tumors. He also describes the arrangement for concentrating the action of the rays on the diseased focus without injuring the surrounding healthy tissue — sensitization and secondary rays.

DORN.



## GYNECOLOGY

### UTERUS

**Cobb, F.: Cancer of the Uterus.** *Boston M. & S. J.*, 1914, clxx, 861. By Surg., Gynec. & Obst.

The author summarizes the value of the paper as follows:

1. "It gives a complete analysis, from the standpoint of end-results, of all the cases of cancer of the uterus at the Massachusetts General Hospital for fourteen years, from 1900 to 1913 inclusive, 367 in number, of which 70 were my own personal cases.

2. "It emphasizes the importance of early diagnosis of cancer of the cervix and distinctly shows the possibility of cure by the extended abdominal (Wertheim) operation, and describes certain original methods of operating which are of importance."

The need of awakening the public to the fact that irregular bleeding at any time in a woman's life may mean cancer of the cervix or uterus, and should be investigated, is shown by an analysis of the 367 cases reported, of which 230, 63.8 per cent, came too late for a radical operation. In Wertheim's statistics, 50 per cent were inoperable. The ignorance of the laity as to the nature of the disease, the insidious onset, the neglect of medical men to examine their cases or their inability to recognize the importance of conditions found, are responsible for this high mortality.

Irregular bleeding is the most common early symptom; pain is a late symptom. One year was the average duration of symptoms of the 230 inoperable cases. Seven to eight months was the average duration of life in the cases not operated; thirteen months in cases in which a palliative operation was performed. Palliative operation is strongly recommended to relieve pain and hæmorrhage and prolong life. Curettage and the cautery are most useful with the local application of acetone or formalin between curettings. Radium may be tried, and general tonic treatment and the use of opium, as indicated.

The author had good results in eight cases in which he supplemented the curetting and cauterization by opening the abdomen and ligating the internal iliac arteries; the relief from pain and hæmorrhage was remarkable. Both internal iliac arteries are tied with silk, and the abdomen closed without drainage, and by thus stopping the blood supply the malignant growth is starved and pain and hæmorrhage relieved.

In determining which cases should be operated upon, the necessity of an exploratory laparotomy is advocated. If it is decided not to do a radical operation, the palliative operation of tying the internal iliac arteries can then be done. The general

condition of the patient must be considered. A long tedious operation should not be done in a feeble subject nor in an extremely obese patient. In the latter cases a vaginal hysterectomy is advised. The possibility of determining the operability of a patient without opening the abdomen to explore, is considered very difficult.

Wertheim's report in 1912 showed he had done the radical operation 675 times; 380 were done over five years previously, 160 of which were cured, over 42 per cent.

In the author's series, 17 vaginal hysterectomies were performed with no immediate mortality. Fourteen of these were done over five years previous, eight of which were traced with two cures, 25 per cent. As 10 per cent of cures is the average in vaginal hysterectomy it is advised only for cases in poor condition or cases obtained very early in the course of the disease.

Abdominal hysterectomy for cancer of the fundus was performed 27 times with an immediate mortality of 4. Fourteen cases done five years or more previous were traced, showing six cures, 42.8 per cent.

Abdominal hysterectomy for cancer of the cervix was done in 89 cases, simple hysterectomy 49 times, and radical hysterectomy 40 times. By radical hysterectomy is meant the removal of the uterus and a liberal portion of the vagina through a median abdominal incision with thorough dissection of the ureters and bladder, and the removal of as much of the parametrium as possible, the regional lymph-glands being removed only if palpably enlarged. A plea is made to have cancer cases treated only by specially trained men to whom this radical operation is familiar. It is believed that a much greater percentage of cures could be obtained by men specializing in cancer cases. In the 49 simple hysterectomies the immediate mortality was 17, or 34.6 per cent. Of the 26 traced cases, 5 were cured, 19 per cent. In the 40 radical hysterectomies there was an immediate mortality of 9, or 22.5 per cent. Of the surviving 31 cases, 14 had been operated on over five years ago, and 7 were cured, 50 per cent. Septic peritonitis and shock were the most frequent causes of death in the abdominal hysterectomies.

"The important factors in the radical operation are:

- "1. The preliminary preparation.
- "2. The anæsthetic, with special reference to the prevention of shock.
- "3. The abdominal incision.
- "4. The freeing and handling of the ureters.
- "5. Removal of the parametrium and glands.
- "6. Control of hæmorrhage.

"7. Prevention of peritoneal infection and implantation metastasis from the growth itself.

"8. Drainage and after-treatment."

In preparing the patient, the functional renal test is taken, a percentage of 25 contra-indicating the radical operation. In cases with excessive hæmorrhage, curetting and cauterization are done at once and then sufficient time is allowed for the patient to recover somewhat before the radical operation is done. The vagina is cleansed with green soap and water and a 1:2000 bichloride douche used; the curette and cautery are employed if necessary; the vagina is filled with tincture of iodine, swabbed dry and then filled with alcohol, and the alcohol washed out with a 1:2000 bichloride douche; all this is done while the patient is being anæsthetized. A small gauze sponge is packed lightly in the vagina.

The anæsthetic is preceded by a hypodermic of  $\frac{1}{4}$  gr. morphine and  $\frac{1}{120}$  gr. atropine. A spinal injection between the second and third lumbar vertebræ of from 1 to 2 ccm. of tropococaine, 5 per cent with suprarenin, is given, followed by ether anæsthesia. The spinal injection is used as a "nerve block."

A long median abdominal incision is made from above the umbilicus to the symphysis, the anterior sheath of the rectus being divided above the symphysis if necessary.

The author's method of handling the ureters is as follows: "After the ovarian artery has been tied and the broad ligament opened up, the peritoneum being divided above the bifurcation of the iliac arteries, the ureter is exposed lying on the inner and posterior peritoneal flap of the broad ligament. The internal iliac artery is then exposed and ligated with chromic catgut, after which the posterior peritoneal layer of the broad ligament is incised below the ureter, midway between the bifurcation of the iliac arteries and the uterus, parallel with the ureter and about half or three-quarters of an inch away from it; and through this slit, tapes one-half an inch wide, wet with sterile salt solution, are passed, surrounding the ureter." Strong traction can be made on the ureters without damaging their blood supply.

To prevent septic peritonitis from the local cervical infiltration, the right-angled clamps devised by Wertheim are used to clamp off the vagina, and the vagina is divided by an electric cautery, a right-angled blade being used.

The uterus and vagina are freed from the bladder and rectum, the ureters are lifted up by tape and the parametrial tissue dissected close to the pelvis from above the cervix well down into the vagina. All palpably enlarged glands are removed. To find the glands the peritoneum must be split and the vessels exposed. The author believes ligation of the internal iliac arteries aids materially in controlling hæmorrhage and is followed by no ill effects. Drainage is obtained by iodoform gauze strips passing through the vagina; they are started on the fifth day and removed an inch or two daily. Abdominal drainage is used if necessary. In the after-treat-

ment the head of the bed is elevated, salt solution given per rectum as indicated, and continuous catheterization employed for three or four days with urotropine by mouth to prevent cystitis.

Five out of the last six cases operated on by the author have been cured by this radical operation.

D. H. BOYD.

**Degrais, P. and Bellot, A.: Cancer of the Uterus, and Radium.** *Canad. Pract. & Rev.*, 1914, xxxix, 334.  
By Surg., Gynec. & Obst.

The authors give, very concisely, their results in the radium treatment of cancer of the uterus, and their views regarding radiotherapy. The satisfactory results obtained in the different groups of cases have led them to regard radium as a valuable therapeutic agent, and they place it in a similar category with the operative technique. In a large number of cases it can with advantage supplement this technique, and is a valuable substitute for it in inoperable cases and recurrences. Until cases treated by radium have remained without recurrence for six or eight years it is logical to employ surgery for the operable cases. A preliminary use of radium has rendered operable, cases which were inoperable.

They state that the results vary considerably in accordance with the variety of cancer, the extent of the lesions, and the severity of the general organic intoxication, but affirm that there has not been a single case in which the patient has not derived real benefit from the radium treatment. Two of the symptoms, pain and hæmorrhage, are always favorably influenced, even when there is no hope of improvement of long duration, and, in some cases, even the most severe, the patients remain to the end in a fairly comfortable condition, as the cachexia to which they succumb is due to a general toxæmia of long standing. In inoperable cancer of the cervix, the authors favor a preliminary curettage.

The authors have treated two cases of sarcoma of the uterus. The first case, in which treatment began nearly a year ago, now has no evidence of disease. The second, an apparently hopeless case, under intense irradiation has shown a great improvement.

A detailed histological study is given, showing the tissue changes following radium treatment of cancer of the cervix.

C. H. DAVIS.

**Kassogledoff: Primary Results of Radium and Röntgen Treatment in Inoperable Cancer of the Uterus, and in Post-Operative Recurrences** (Über die primären Resultate der Radium- und Röntgentherapie bei inoperablem Gebärmutterkrebs und postoperativen Rezidiven). *Vrach Gaz.*, 1914, xxi, 545.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Kassogledoff describes the technique of radium treatment in use at the Helena Hospital. He believes that advanced cases are not suitable for irradiation, even with strongly filtered rays, as the process may grow worse and lead to septicæmia from septic necrosis of the cancerous masses.



Combined treatment with radium and röntgen rays hastens the beginning of the reaction without having any effect on its severity, which depends more on the extent of the process. The weight generally decreases in the beginning of the treatment; in some cases the decrease persists, in others the weight gradually returns to normal. Blood examination does not give uniform results. The local changes vary. Ordinarily the discharge is at first increased and becomes seropurulent. The odor disappears and the hæmorrhage stops, usually after three to four weeks. The tumor contracts, the ulcers become clean and covered over with a fibrous layer, and stenosis takes place in the vagina around the ulcerations. Infiltrations disappear and solid bands take their place. Four detailed case histories are given, with the microscopic findings before and after irradiation.

From his experience the author comes to the following conclusions:

In inoperable cancer of the uterus, in recurrences, and in cases that are not very far advanced, a sufficiently intense combined treatment with filtered radium and röntgen rays produces marked improvement, or even clinical recovery with the disappearance of all symptoms. Such improvement has never before been obtained with any kind of conservative local treatment. Cancer-cells are undoubtedly destroyed by a sufficient dosage of rays. In two cases the destruction of cancer-cells was microscopically demonstrated to a depth of 1 cm. Deeper layers were not examined and the author therefore expresses no opinion in regard to them. The permanent results cannot be reported, as the time is too short—98, 83, 74, and 54 days.

JENTER.

**Lahm, W.: Effect of Radium-Mesothorium Treatment on Carcinoma of the Cervix** (Über den Einfluss von Radium-Mesothorium-bestrahlung auf das Cervixcarcinom). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 279.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author maintains that the results of irradiation are due to autovaccination, as the rays, supplemented by leucocytic ferments, destroy the tumor, bit by bit, by phagocytosis and it is then carried into the blood-stream. The author comes to this conclusion from the exact observation and examination of a carcinoma of the cervix, treated at intervals of 8 days with 4,000 milligram-hours of mesothorium and 125 milligram-hours of radium. It decreased in size, and the histological examination showed changes which led to this conclusion. This is not the only case in which such an atrophy of tissues and organs takes place through phagocytosis; as Metchnikoff and his students have shown, phagocytosis plays a part in the destruction of normal organs in the metamorphosis of many animals; for instance, in the transformation of the auricular windings in holothurians and in the disappearance of the tails in tadpoles. It is entirely possible that

carcinoma metastases may be influenced in this way. This hypothesis having been recognized, the dosage should be regulated in accordance with it, and the phagocytic properties of the blood stimulated in every way by the injection of autolysins, blood, or serum. The same principles must be followed as those generally recognized in immunization against infections. If metastases have occurred or marked cachexia, small or moderate doses should be given at first, in order not to overburden the reactive capacity of the body and thus bring about the opposite condition to the one intended.

K. HOFFMANN.

**Schickele, G.: Clinical and Topographical Anatomical Study of Myoma of the Cervix, with Remarks on Their Operative Removal** (Klinische und topographisch-anatomische Studien über Cervixmyome nebst Bemerkungen über ihre operative Entfernung). *Ztschr. f. Geburtsh. u. Gynäk.*, 1914, lxxv, 684.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author tries to make clear by a series of cases the localization, direction of growth, and relations of myoma of the cervix to neighboring organs, and to draw practical conclusions in regard to operation from these facts.

Large myomata of the posterior wall of the cervix lead to obliteration of the posterior lip of the os and to typical displacements of the uterine artery outward, and of the bladder and body of the uterus upward. The ureters are generally displaced outward or downward and not lifted upward; the latter is only exceptionally the case if the primary seat of the tumor is beneath the ureter and there is pronounced growth of it into the parametrium, or if there is a secondary nodule on the primary tumor that grows into the parametrium. Ordinarily, these myomata grow uniformly in all directions. Similar conditions are found in myomata of the anterior wall and in conglomerations of myomata proceeding from the anterior or posterior wall.

The topographical displacements of the neighboring organs are more complicated in multiple myomatous nodules separated from one another; here, there is generally displacement of the ureters upward. Also the infundibulopelvic ligament and the adnexa can be dislocated upward, as well as the sigmoid flexure. These displacements, however, can always be explained by the original position of the tumor and the direction of its growth. Therefore, it becomes necessary, if possible before the operation or at any rate at the beginning of it, to determine the topographical relations. This can be partly accomplished by external and combined examination, best by transverse incision of the anterior peritoneum and examination of the tumor complex from before backwards. This gives a certain typical method of operation, the most essential point of which is the early exposure of the anterior wall of the cervix and incision of the vagina. As to the growth of the tumor, Schickele comes to the conclusion that, in



general, it takes place equally on all sides and in a straight line; but it may show an unsymmetrical growth, which is not dependent entirely on the resistance of the neighboring parts, but is influenced by the contractility of the uterine musculature.

SCHINDLER.

**Beckmann, W.: Study of Heterologous Mesodermic New-Growths of the Cervix** (Zur Kenntnis der heterologen mesodermalen Neubildungen des Gebärmutterhalses). *Ztschr. f. Geburtsh. u. Gynäk.*, 1914, lxxv, 566.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A 22-year-old nullipara with a bilateral catarrh of the apices had had a white discharge for 3 months, and at the last there had been an almost continuous bloody discharge. The vagina filled with a soft polypous tumor, as large as a fist, originating in the cervical canal. The cervix and internal os admitted the finger; the cavity of the uterus was not increased in size and was free from tumor. There was thickening and lengthening of the anterior lip of the os, from whose surface arose another tumor as large as an egg. There was also a tumor of the posterior lip which extended into the posterior vault of the vagina. The parametrium on both sides was infiltrated. Under lumbar anæsthesia the tumor was removed with the finger, a sharp curette, and scissors. The cervical cavity was cauterized, but radical operation was not undertaken on account of advanced cachexia, infiltration of the parametrium, and suspicion of sarcomatous metastases in the lungs. Three weeks later there was recurrence; after 4 more weeks there was involvement of inguinal glands and a large tumor reaching to the umbilicus, and extending out of the introitus vagina was again removed with the finger and scissors. Cauterization was followed soon by death. The diagnosis was sarcoma of the cervix and left ovary.

A detailed microscopical description of the tumor is given and it is compared with others described by other authors. The tumor was of embryonic tissue from the mesoderm, which, by unlimited proliferation of cells, formed a sarcoma. The etiology and course of heterologous cervical sarcomata are discussed.

MORALLER.

**Benthin, W.: Etiology of Myoma of the Uterus** (Zur Ätiologie der Uterusmyome). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 501.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In reply to Freund's suggestion that defective development in general, and of the genitalia in particular, is responsible for the development of fibromyomata, two cases are published, in both of which there were multiple myomata of a bipartite uterus; in one case there was also a septum of the vagina and, in both cases, double fimbriæ. A statistical study of the Königsberger material, however, shows that these are the only cases of anomaly of the uterus in 912 uteri removed for myoma, and also the only instances in which myoma developed,

among the 24 cases of duplication in the genitalia. Genital anomalies, therefore, can hardly be considered seriously as a cause of fibromyoma. Moos.

**Mahler, J.: "Myoma Heart" and Deep Irradiation** ("Myomherz" und Tiefentherapie). *Med. Klin.*, Berl., 1914, x, 588.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author believes that the pathological changes in the heart, found on autopsy of women with myomata, are the total result of the injury caused by hæmorrhages and the change in ovarian function. According to his experience the first heart symptoms observed in myoma cases are functional disturbances to which symptoms of hypertrophy and dilatation are added later. The cause of these symptoms is probably abnormal innervation due to changes in the tonus of the autonomous and vegetative nervous systems.

In 11 cases of myoma with heart symptoms and demonstrable changes in the heart, the author got marked improvement by the use of röntgen rays. The subjective symptoms disappeared first, and later the objective ones, the most important change being a retrogression of the dilatation. Results were obtained in three cases in which there was a beginning lack of compensation. Heart changes and anæmia do not constitute a contra-indication to irradiation of the myoma. In one case a marked fall was observed in the high blood-pressure. Five cases of climacteric hæmorrhage were also favorably affected by deep irradiation. The most favorable effect of the irradiation is due to the fact that the ovarian secretion, which has been changed in quality, is either done away with or brought back to normal. The technique of the irradiation is described.

DORN.

**Broughton-Alcock, W.: Treatment of a Uterine Abscess by Sensitized Bacilli Protei.** *Brit. M. J.*, 1914, i, 1224.

By Surg., Gynec. & Obst.

The author reports the treatment of an abscess which drained through the cervical stump following a subtotal hysterectomy for fibroma. A culture showed a pure culture of bacillus proteus. The patient was given daily vaginal douches, and, at intervals of three or four days, seven injections of a culture of the bacilli derived from the pus. One hundred millions were given the first injection, and two thousand million the last. The bacilli were heated to 60°, an hour before administration.

On the eighth day after the last injection of these dead bacilli 20 ccm. of blood was taken from the patient and used for the preparation of an autogenous vaccine consisting of living bacilli, sensitized by contact with the serum of the patient's blood, which was rich in amboceptor and specific agglutinating qualities.

On the tenth day after the last injection of dead bacilli, injection of the sensitized autogenous vaccine was commenced, one injection being given weekly for four weeks, and the dose increased from four



hundred million at the first to one thousand million at the end. Very slight reactions followed the injections. At the same time the abscess was washed out with a dilute antiseptic solution. Although there was no evidence of pus after the fourth injection, four subsequent injections were given. After six months there has been no evidence of the infection.

C. H. DAVIS.

**Miller, J. W.: Corpus Luteum, Menstruation, and Pregnancy** (Corpus luteum, Menstruation und Gravidität). *Arch. f. Gynäk.*, 1914, ci, 568.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

There is a fixed relation of dependence between ovulation and menstruation, and the rupture of the follicle precedes the menstrual discharge by about 9 days. The corpus luteum is epithelial in nature. This hypothesis is supported by the history of development and the appearance of colloid drops. In the development of the corpus luteum there is first an increase in the theca interna by the deposition of fat and then an increase in the granulosa cells by mitotic division. After the rupture of the follicle the granulosa cells are transformed into lutein cells by taking up lipid combinations and yellow coloring matter; then follows vascularization and immigration of connective tissue; then retrogression. At this period neutral fat can first be demonstrated.

The corpus luteum of pregnancy is distinguished from that of menstruation by the almost complete absence of the fat reaction, colloid degeneration, and deposition of calcium. The corpus luteum causes the cyclic change in the endometrium and the decidua and makes the implantation of the ovum possible.

In connection with Fränkel's experiments a case is reported in which after the beginning of pregnancy the corpus luteum was removed, and retrogression of the uterus took place without abortion, after the type of the absorption of the egg-chamber in rabbits. Lactation atrophy is not a reflex trophoneurosis but the result of the withdrawal of the corpus luteum. The toxicoses of pregnancy may possibly be due to hypofunction of this organ. Among 40 to 50 ovaries removed by operation, the corpus luteum was lacking in one case of eclampsia. In another case of eclampsia there was a cyst in the center of the corpus luteum. Nothing could be seen of the normal epithelium. An internal secretion cannot be demonstrated *in vitro* by the complement-fixation method, for the hormones do not cause the formation of antibodies. Experiments with vital staining have as yet had no results. Menstruation is only an unburdening of the hyperæmic uterus. Rutting and menstruation are different phenomena. The menstrual blood is possibly a nutrient fluid for the ovum. The tenth day before the beginning of the new period is the most suitable time for artificial impregnation. Only the ovum of the first missed period is implanted. The duration of pregnancy should be reduced 19 days.

BENTHIN.

**Driessen, L. F.: Endometritis, Resulting from Abnormal Menstruation, and Causing Profuse Hæmorrhage** (Endometritis, folge abnormaler Menstruation, ursache profuser Blutungen). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 618.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Driessen examined a series of women, some of them totally and some of them probably sterile, and discovered a peculiar kind of endometritis which he called incomplete post-menstrual necrobiosis, the clinical symptom of which was profuse hæmorrhage; microscopically, it was manifested by necrosis, hyaline degeneration, infiltration with multinuclear leucocytes, dilatation of the vessels, cystic dilation of the glands, proliferation of epithelium, and deficient glycogen; also by signs of incomplete regeneration of the mucous membrane such as are found in endometritis following abortion. The explanation is as follows:

In the normal course of menstruation the mucous membrane is cast off and a new one formed; but if ovulation or menstruation does not take place normally, the casting off of the mucous membrane may not be complete, and the remaining necrobiosis particles cause an incomplete regeneration of the mucous membrane, as do the remnants of an abortion or of the decidua. Recovery can only take place after the removal of these remnants. If, in spite of this procedure, the abnormal casting off and regeneration of the mucous membrane recurs, the only thing to be done is to castrate by operation, or better still, by irradiation.

BISCHOFF.

**Vautrin: The Treatment of Inversion of the Uterus Should Be Conservative** (La cure de l'inversion utérine doit être conservatrice). *Rev. prat. d'obst. et. de gynec.*, Par., 1914, xxii, 78.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The most unusual form of inversion is the idiopathic in old women; its treatment should always be surgical. The partial or complete inversions caused by tumors should be treated conservatively by removal of the cause except in cases of malignant tumors, when hysterectomy is indicated. Puerperal inversion should be treated at once by reposition with the hand, pessary, or colpeurynter. In chronic forms, if these mild measures fail, anterior or posterior colpohysterotomy should be performed. Vautrin prefers long incisions to the fundus to the shorter ones, and the posterior to the anterior, and does not use the abdominal route.

BAUER.

**Cuthbertson, W.: An Improved Gilliam Operation for Uterine Displacements.** *Surg., Gynec. & Obst.*, 1914, xvii, 721.

By Surg., Gynec. & Obst.

The Alexander operation was formerly one of the most widely used in the correction of uterine displacements, but was applicable only to those cases which were free from adhesions and infections and those in which the uterus could be drawn forward. Any operations which involve the use of the broad ligament are wrong in mechanical principle, and it



would seem that the round ligaments are the most useful structures for correcting these displacements by drawing the uterus upward and forward, the only objection to their use being their tendency to pull out of their new anchorage.

The first step in the new operation is to make a Pfannenstiell incision across the lower abdomen and enter the peritoneal cavity through a small median vertical incision.

The round ligaments are then drawn through the anterior abdominal wall, as in the Gilliam operation. With a scalpel a strip of fascia from the external oblique is pulled up to a point above where the ligament emerges from the wall of the abdomen. This strip of fascia is then seized by a forceps passed between the two arms of the loop of the ligament, and drawn down into place and sutured. This strip of fascia holds the ligaments permanently in their new position. Cuthbertson has performed this operation on fifteen women in the past two years. Twelve of them have been kept under observation and have had no recurrences, two of the twelve having passed through normal labors since the operation.

**Everke: Pituitrin and Rupture of the Uterus**  
(Pituitrin und Ruptura uteri). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 553.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The patient was a V-para whose previous deliveries had been normal. When the os was dilated to the size of a five-mark piece the contractions became weak and 0.75 gr. pituitrin was given subcutaneously. Strong contractions followed and after two hours there was sudden collapse and severe pain in the abdomen. The woman was brought to the hospital moribund. Version was performed and the child which lay in the abdominal cavity was extracted. Laparotomy showed that the uterus was completely ruptured. Suturing and tamponing were hastily done but death ensued. The pelvis showed marked general contraction. The child was full-term. In the earlier deliveries the foetuses must have been very small. The pituitrin caused the rupture because of the disproportion between the size of the head and that of the pelvis.

RUHEMANN.

**Haim, E.: Prophylaxis of General Peritonitis in Operations on the True Pelvis, Especially in the Radical Abdominal Total Extirpation of the Uterus for Carcinoma** (Zur Verhütung der allgemeinen Peritonitis bei Operationen im kleinen Becken, insbesondere bei der erweiterten abdominalen Totalexstirpation des Uterus wegen Carcinom). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 471.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Surgeons have found that the peritoneum of the true pelvis has slight capacity for absorbing septic products and lends itself more readily to drainage. Therefore, in three cases of operation for carcinoma of the uterus, at the close of the operation, Haim, after sufficiently peritonizing the connective-tissue

surfaces, shut off the abdominal cavity from the pelvis with a septum formed as follows: The cæcum and the sigmoid flexure were sutured to each other and to the anterior and posterior parietal peritoneum, by utilizing the different mesenteric folds of the cæcum and the appendix and the appendices epiploicæ of the flexure. The procedure is technically easy and does not materially prolong the operation. All three cases recovered and were in remarkably good condition after the operation.

GRAEUPNER.

**Villechaise, P.: Total Abdominal Hysterectomy by Anterior Section of the Cervix** (L'hystérectomie abdominale totale par décollation antérieure). *Thèses de doct., Par.*, 1914. By Journal de Chirurgie.

At present most surgeons regard this method as an exceptional one. The author, following Ricard and Martel, proposes to make it a general method. He emphasizes certain technical details borrowed from Martel which facilitate the procedure; viz., clamping of the round ligaments and dissecting off the anterior peritoneum of the bladder before sectioning the uterus, and preventive clamping of the uterine arteries after deep exploration of the posterior fold of the broad ligament with the finger; this is not always possible, particularly when there are posterior adhesions or a large suppurative salpingitis adherent to the broad ligament.

This technique, which enables tubes affected with salpingitis to be removed from below upward, is adapted not only to inflammations of the adnexa, but to tumors of the broad ligament, and to lateral and posterior fibromata of the uterus. The gravest complaint to be made against the operation is that the primary section of the cervix opens the uterine cavity at the beginning of the operation, which is an offense against asepsis. This objection does not hold in cases of salpingitis that are septic, but does hold in fibroids.

L. CHEVRIER.

**Markoff, A.: Sudden Relaxation of the Uterus in Curettage** (Über die plötzliche Erschlaffung des Uterus bei Abrasionen). *Izvest. Nikolaj. Univ. v. Saratove*, 1913, iv, 239.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports four cases of his own and discusses the clinical picture of sudden relaxation of the uterus, which was authentically demonstrated by Beuttner in 1908. The course in all four cases was normal. The curettage was done without anaesthesia. The wall of the uterus which had been offering resistance, suddenly was no longer palpable, but became so again after a douching with a hot iodine solution. None of the women felt the sudden dilatation subjectively, nor showed any symptoms such as collapse, change in pulse, or respiration. The possibility of perforation was excluded.

Predisposing factors in sudden relaxation are subinvolution, hypoplasia, metritis, anaemia, and degenerative changes in the ovaries, but the real cause is organic or functional insufficiency of the uterine



muscles. The mechanism of the sudden dilatation is not yet clear. Neither the introduction of a foreign body nor stimulation of the uterine ganglia can be held to be the cause, especially when the rarity of the condition is considered. It is certain that the sudden relaxation is caused by a mechanical stimulation and that it is dependent on the condition of the uterine musculature, which may be insufficient, in which case it is more quickly exhausted. The result is a temporary loss of the capacity for contraction. There may be difficulty in making a differential diagnosis from perforation; but this can be made in a measure from the contractions that begin again after the relaxation. When the relaxation takes place all instruments should be immediately removed from the uterus, as contraction may take place and cause a perforation. WAEBER.

**Fuchs, J.: Experimental Study of the Effect of Expressed Juices and Extracts from the Thyroid, Ovary, and Placenta, on the Rabbit's Uterus in Vitro** (Experimentelle Untersuchungen über die Wirkung von Presssäften und Extrakten aus Schilddrüse, Eierstock und Placenta auf den überlebenden Kaninchenuterus). *Ztschr. f. Geburtsh. u. Gynäk.*, 1914, lxxv, 653.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Fuchs made experiments *in vitro* on the uteri of rabbits that had been pregnant. The expressed juices were prepared as follows: The organ was macerated in a meat-cutting machine, ground in a mortar, and expressed with the Buschner press. In some of the cases the organ was previously washed out in distilled water, in others the juice was first hæmolyzed and then centrifuged. Extracts were prepared with physiological salt solution: 1 part substance to 9 parts salt solution and, in some of the cases, 12 per cent of the volume of 90 per cent carbolic acid was added.

Merck's ovarian extract and Knoll's ovaraden were also tested. The results were as follows: (1) The greater part of the fluids were without much effect; (2) the expressed juice from the thyroid had a stimulating effect; (3) expressed juices and extracts from ovaries generally had an inhibitory effect; (4) expressed juices and extracts from placenta generally had an inhibitory effect; (5) extracts from all the organs with carbolic acid added, always had an inhibitory effect, which was to be ascribed to the carbolic acid content. ZOEPFTRITZ.

#### ADNEXAL AND PERIUTERINE CONDITIONS

**Meyer, R.: Pathological Anatomy of the Ovary: Oöphoritis** (Beiträge zur pathologischen Anatomie des Ovariums: Oöphoritis). *Ztschr. f. Geburtsh. u. Gynäk.*, 1914, lxxv, 761.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A case of acute follicular oöphoritis after septic abortion is described, in which the follicle and its immediate surroundings are almost exclusively involved. Important points in the diagnosis of chronic oöphoritis are infiltration, granulation tis-

sue, and abscesses; also, besides perioöphoritic changes, the presence of oedematous, circumscribed parts with rarefaction of the tissue and loss of the parenchyma with sclerotic scars. Demonstration of advanced degrees of epithelial proliferation under and in the adhesions of the ovaries, especially in adhesions with the tubes. Solitary abscesses arise from infection of the corpus luteum at the point of rupture from the perioöphoritis. It is impossible to make a diagnosis of a given abscess as a corpus luteum abscess, because the lutein cells are immediately destroyed. The ovarian abscess heals by the abscess cavity becoming lined with epithelium from the surface of the ovary or the fimbria. The cavities are then closed off as cysts. Pseudoxanthoma cells appear under the epithelium with other remnants of the inflammatory process.

MORALLER.

**Cattaneo, D.: Structure of the Ovaries in Mammals** (Ricerche sulla struttura dell'ovario dei mammiferi). *Arch. ital. di anat. e di embriol.*, 1914, xii, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Nearly twenty different methods are described: Golgi's, Fananas', Verrati's, Kopsch's, Benda's, and others, and Cattaneo himself studied the endoplasmic structure of the ovary cells and especially the cells of the ovum. He got the best results with the ovaries of different kinds of bats, but also examined those of various kinds of mammals, up to man.

He comes to the conclusion that Golgi's network is a constant constituent of the ovum cells with a characteristic arrangement, which is subjected to certain changes in the course of development, and which is to be regarded as an important part of the cellular structure. The network is found even in the undifferentiated germinal cells of the Valentin-Pflüger utricles. The structure and position change during development, until finally, when the oöcyte has nearly finished its growth, it lies in the cortical zone.

The findings and questions in regard to the mitochondria are very complicated; these have long been known and described, but they are extraordinarily inconstant and unspecific in their morphological and microchemical characteristics and there are many not very well founded hypotheses as to their physiological function. Renaut considers them elective organs for extracting secretions, Meves thinks they are organs of inheritance. The author could not confirm the findings of some authors who believe that the mitochondria are directly transformed into yolk-forming material. WEISHAUPT.

**Bucura, C. J.: Theory of the Internal Secretion of the Ovary** (Zur Theorie der inneren Sekretion des Eierstocks). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1839.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Bucura tries to show that the corpus luteum is to be regarded as the histological continuation of the

follicle, which has discharged its ovum, and that it forms hormones that have the same effect as those of the intact follicle, which he regards as the only source of the internal secretion of the ovary. This theory may hold true for man, but in many species of animals it cannot be denied that the interstitial glands have an internal secretory function. These cells, which are formed of stroma cells and again become stroma cells, and in distinction from the granulosa lutein cells are connective tissue in nature, he regards as cells which are only changed morphologically by the assimilation and storing of hormones and, physiologically, are only passive storehouses for hormones. Bouin and Ancel's "myometrial ductless gland" is also probably only a place where ovarian hormones are stored. Bucura also believes that the placenta and foetus must have the same hormone effect as the follicle, as they are descendants of it. This theory would do away with the necessity of assuming a special internal secretory part of the ovary. HOFSTÄTTER.

**Kulesch, L.: Golgi's Network in the Cells of the Ovary** (Der Netzapparat von Golgi in den Zellen des Eierstockes). *Arch. f. mikroskop. Anat.*, 1914, lxxxiv, 142.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author used for his work the ovaries of cats, dogs, rabbits, guinea pigs, white rats, and hedgehogs. He used Golgi's method of silver staining and followed Riquier's directions, which are described. The findings as to the network in the different cells are given in detail with colored illustrations. The results are as follows: The network is found in the germinal epithelium and in the cells originating from it, in the young ovum cells, in the follicular epithelium, and the cells of the corpus luteum. It is lacking, or at least cannot be demonstrated, in the ovum cells of the graafian follicle. In the first-named cells it is present during mitosis and causes characteristic changes in form and position. MEYER.

**Iscovesco, H.: Physiological and Therapeutic Study of Lipoids of the Ovary and Corpus Luteum, Stimulating to Animals of the Same Species** (Lipoides homo-stimulants de l'ovarie et du corps jaune. Étude physiologique et thérapeutique.) *Rev. de gynec. et de chir. abdom.*, Par., 1914, xxii, 161.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The products of internal secretion have been divided into two classes: (1) those which are used directly by the organism and (2) those which neutralize certain toxins produced by the body. The author discusses the conception of hyper- and hypo-function of the glands with internal secretion. Among the substances secreted the lipoids play an important part, and the author goes into a detailed discussion of their significance.

The lipoids of the ovary, the corpus luteum, the testicles, the red blood-cells, etc., are studied. There are two groups of lipoids: (1) those that are

stimulating only to the same species and (2) those that are stimulating to other species. The organs of internal secretion contain mixtures of lipoids which may be very different from one another, comparable to the three very different ferments of the pancreas. The ovaries when placed in alcohol, then dried and pulverized, then slowly extracted in acetone, ether, and chloroform, produce an extract which is soluble in alcohol, insoluble in acetone, and soluble in ether. HEIMANN.

**Bauer, E. The So-Called Struma of the Ovary; a Study of the Histogenesis of Ovarian Cysts** (Über die sogenannte "Struma ovarii." Ein Beitrag zur Histogenese der Ovarialcystome). *Ztschr. f. Geburtsh. u. Gynäk.*, 1914, lxxv, 617.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author describes a very exact macroscopical and microscopical study of a so-called struma of the ovary. It is shown, histologically, that the tumor described originated from the surface epithelium of the ovary. Iodine could not be demonstrated in the colloidal secretion. Although the histological picture was markedly similar to that of true goiter, there is no proof that these tumors are either metastases from goiter, or teratomata with development of thyroid tissue exclusively; but as such pictures are also found in ordinary cystadenomata, the author concludes that struma of the ovary is only a cystadenoma of peculiar form.

The previously described cases of struma of the ovary are probably also to be explained in this way, even those in which, besides the goiter-like tissue, other constituents of true teratoma are to be found, since teratoma and cystadenoma not infrequently coexist. At the same time the histological pictures show that cystadenomata may originate from the surface epithelium. BESSERER.

**Von Klein: Coexistence of a Hydatidiform Mole and Bilateral Colloid Cysts of the Ovaries** (Koinzidenz einer Blasenmole mit doppelseitigem Kolloidcystom der Ovarien). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 561.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Laparotomy was performed on a 25-year-old woman in the second month of pregnancy with a clinical diagnosis of increasing retro-uterine hæmatocele with intra-uterine pregnancy. The uterus was the size of a five months' pregnancy. There was a tumor of the right ovary, as large as a fist, with a twisted pedicle, and one of the left ovary, the size of a child's head, incarcerated in the pelvis; the latter had simulated a hæmatocele. Three hours after the operation a hydatidiform mole was spontaneously emptied and the remnants of the mole removed conservatively. On the ninth day the rest of the mole was removed because of a rise in the pulse. Recovery followed. Microscopic examination showed absence of villi, Langhan's cells, and syncytial masses; that is, the mole was benign, according to Polano's classification. RUHEMANN.



**Antonelli, G.: Experimental Study of the Effect of Ovarian Castration on the Blood-Picture** (Ricerche sperimentali intorno agli effetti della castrazione ovarica sul sangue). *Policlin.*, Roma, 1914, xxi, 97.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The removal of the ovaries from young dogs that have just become sexually mature leads to changes in the blood-picture consisting of more or less marked decrease in the number of red blood-cells and decrease in hæmoglobin. In certain cases there is a moderate degree of leucopænia, with relative lymphocytosis, or mononucleosis. After about two months these changes are compensated for. From this it appears that the ovary, under physiological conditions, has an internal secretion that exercises an effect on the blood-forming as well as the leucocyte-forming organs. JOANNOVICS.

**Wichmann, S. E.: The Epithelium of the Appendages of the Broad Ligament** (Über das Epithel der Anhangsgebilde des Ligamentum latum). *Arch. f. Gynäk.*, 1914, cii, 70.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

From his research the author comes to the following conclusions: The first ciliated cells in the müllerian epithelium appear at the beginning of the fourth month of intra-uterine life, and appear first in the epithelium of the fimbria of the ovary. The formation of cilia then gradually passes down the tube, and reaches the cornua of the uterus probably about the seventh month. In the new-born the ciliated cells at the fimbria of the ovary and in the lateral part of the tube are about as numerous as the non-ciliated ones.

The first ciliated cells always appear in pairs; therefore, it may be assumed that the formation of cilia takes place in very young daughter cells after cell division. The epithelium of the open appendages is very similar to that of the fimbria of the ovary. From about the seventh month, the development of the epithelium of the closed appendages, the hydatids, differs markedly from that of the open ones, probably because of the changed conditions in a closed cystic space. In the hydatids the epithelial picture varies in different cases and in different parts of the same hydatid, chiefly in consequence of the different secretory condition of the epithelial cells. In the actively secreting parts of the hydatid, the large and ciliated cell forms predominate, while the resting epithelium contains only a few ciliated cells, which are mostly low and cylindrical or cubic in form, frequently with a central flagellation.

RUNGE.

**Netto, A.: Appendicitis Associated with Inflammation of the Adnexa** (Contribution à l'étude des appendicites associées aux annexes). *Ann. Paul. de Med. y Cir.*, 1913, i, 16.

By Journal de Chirurgie.

The author gives a résumé of the statistics of Carvalho of Sao Paulo, who, among 123 cases of

laparotomy for diseases of the uterus and adnexa in recent years, found the appendix adherent to the adnexa in 23 cases, that is, in 18.6 per cent of the cases, the adhesions being to the adnexa of the right side in 22 cases and in one case to the tube of the left side. In all these cases Carvalho removed the appendix, thus conforming to the advice given by Barnsby in 1898, that "when the appendix is adherent, if only by its apex, with or without vascular arborizations on the peritoneum, it should be sacrificed absolutely."

P. DE RIO BRANCO.

**Von Lingen, L.: Exudative Pelvic Peritonitis** (Pelvioperitonitis exsudativa). *St. Petersb. med. Ztschr.*, 1914, xxxix, 73.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports 74 cases of pelvic peritonitis which he has treated during the last three years. It may be caused by febrile puerperium, abortion—especially if it is criminal, gonorrhœa, sometimes appendicitis, and probably also by tuberculosis.

The patients generally come to the hospital several weeks after the beginning of the disease and when the pelvic peritonitis has already developed. The clinical picture varies according to the stage of the disease. At first there is severe pain over the whole abdomen, distention, tension of the abdominal walls, nausea, vomiting, etc. These threatening symptoms, however, gradually disappear. The process becomes localized and encapsulated as a result of serous and fibrous exudate and adhesions between the uterus, intestine, omentum, and adnexa. An exudate is formed that is limited above. Examination at this stage shows a large round tumor, which frequently fluctuates and gradually fills the posterior vault of the vagina. Symptoms of the bladder and rectum then appear: tenesmus, retention of urine, discharge of mucus, etc. The temperature is increased. The exudate is either gradually absorbed or a pelvic abscess is formed. If this abscess is not opened at the right time it may rupture into the rectum, more rarely into the bladder, and very rarely into the abdominal cavity.

Half the cases demand incision of the posterior vault of the vagina and drainage of the suppurating focus with a rubber drain left in a long time. The effect is usually surprising. The duration of treatment is about the same in patients treated expectantly and by operation. ECKERT.

**Kreiss: Röntgenological Measurement of the Pelvis** (Röntgenologische Beckenmessung). *Vortr. geh. a. d. Jub.-Kong. d. Deutsche Röntgen-Ges.*, Berl., 1914, Apr.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author gives the results of experiments with the Kehrler-Dessauer apparatus for measuring the pelvis. When the promontory and symphysis are to be seen on the plate the conjugata vera can be measured to a millimeter. The same experiments were made on the pelvis of skeletons, women in the puerperium, rachitic dwarfs, and women pregnant

after a preceding cæsarean section and symphysiotomy, and the results were controlled with Zweifel's pelvimeter.

Good photographs can rarely be obtained at the end of pregnancy, but they can always be obtained up to the fifth month of pregnancy. In taking them the pelvis should be kept absolutely motionless and the pelvic inlet should be parallel to the plate. Such progress in technique will probably be made that it will become possible to measure the true conjugate, radiologically, even in marked adiposity and at all stages of pregnancy. This method has the advantage over internal measurement of not offering any possibility of injury or infection.

AUTOREFERAT.

**Martin, E.: The Pelvis in Prolapse** (Prolapsbecken). *Ztschr. f. Geburtsh. u. Gynäk.*, 1914, lxxv, 749.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Anatomical examination of the pelvis has shown that the median section of the levator ani and the muscle groups of the genito-urinary diaphragm—that is, the part of the pelvic floor forming the hiatus—is without exception stretched and at the same time hypertrophic. Martin concludes that the suspensory apparatus first becomes defective; then after the uterus is deprived of its chief support, and is forced by intra-abdominal pressure out of its typical position, the supporting apparatus is forced into compensatory hypertrophy.

P. MEYER.

#### EXTERNAL GENITALIA

**Pontoppidan, E.: Gonorrhœal Diseases of the Female Genitalia** (Gonorrhöische Affektionen der weiblichen Genitalien). *Ugeskr. f. Læger*, 1914, lxxvi, 377.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Pontoppidan has treated a great number of cases, some of them by different intra-uterine methods, some of them passively, with rest, vaginal douches, and tampons. Of the 157 cases treated by intra-uterine methods, 17.2 per cent had diseases of the adnexa, and of the 156 not so treated 19.1 per cent had affections of the adnexa. This shows that intra-uterine treatment does not provoke disease of the adnexa. It also shows that the length of treatment is not shortened by intra-uterine treatment, with the exception perhaps of treatment with 0.5 per cent hydrochloric acid.

S. A. GAMMELTOFT.

#### MISCELLANEOUS

**Bortkiewitsch, A.: Study of the So-Called Adenomyomata of the Female Genital Tract.** (Beitrag zur Kenntnis der sogenannten Adenomyome des weiblichen Genitaltraktes). *Arch. f. gynäk.*, 1914, ci, 620.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

First a bibliography is given of the most important works on this question, followed by a detailed de-

scription of 10 of the author's cases with microscopic findings. He rejects the hypothesis of true tumor formation and thinks that 7 of his cases were muscle hyperplasias developed from a basis of chronic inflammation—adenomyometritis; one case of vaginal adenomyoma developed from a ruptured Müller's duct. An adenomyoma of the inguinal canal he attributed to a ruptured part of the wolffian duct, and a cystic adenomyoma of the uterus to a ruptured part of the müllerian duct.

BAUER.

**Gudim-Lewkowitsch, D.: Two Cases of Cysts of the Wolffian Duct** (Über zwei Fälle von Cysten des Wolffschen Ganges). *J. akush. i jensk. boliez.*, St. Petersburg, 1914, xxix, 231.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The first case was a cyst of the vagina which was diagnosed as a cyst of the wolffian duct because of the structure of its walls—a single layer of cubical epithelium—and because of its localization in the lateral wall of the vagina. In the second case there was a polyp as large as a hen's egg projecting from the cervix. The polyp, which was removed, was attached to the lateral wall of the internal os by a small pedicle and the contents was bloody. The cavity was lined with a cubical, and in some places cylindrical, epithelium. The structure of the cyst seemed to the author to indicate that it also originated from the wolffian duct; its localization also, for in the region of the internal os the wolffian duct approaches very near to the lumen of the uterus and often develops lateral processes. The anatomical differential diagnosis from other cysts is discussed in detail.

B. OTTOW.

**Meyer-Ruegg, H.: Tuberculosis of the Female Genitalia** (Die Tuberkulose der weiblichen Genitalien). *Schweiz. Rundschau f. Med.*, 1914, xiv, 525.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In two per cent of all female corpses there is found to be tuberculosis of the genital organs. Taking into account only the women dying of tuberculosis, there is genital tuberculosis in 15 per cent. Observations on autopsy show that genital tuberculosis is seldom isolated, but that tubercular foci are to be found elsewhere in the body. In 90 per cent of cases there is tuberculosis of the tubes. The disease is almost always bilateral. In about half the cases the disease passes from the tubes to the uterus. Isolated tuberculosis of the uterus occurs in 11 per cent of the cases; infection of the placenta plays a part also.

The ovaries are seldom affected, the mucous membrane of the cervix, vagina, and vulva, very rarely. Palpation in genital tuberculosis is generally negative; but characteristic nodules can sometimes be found in Douglas' pouch. It is only exceptionally that bacilli are found in the secretion. Curettage for diagnosis is not without danger on account of infection of the tubes, therefore the general condition must be utilized in diagnosis. The tuberculin reaction has little value. Genital tuber-



culosis often recovers; if not it has a very chronic course. It has no tendency to pass into general tubercular peritonitis, and the danger of miliary dissemination is not great. The treatment should be the same as that of general tuberculosis. Operative treatment is justified only in cases in which there is hæmorrhage from the uterus, as a result of the ulceration of the mucosa, so severe in degree as to affect the general condition. JAEGER.

**Meyer, R.: Ectopic Decidua** (Über Ektopische Decidua). *Ztschr. f. Geburtsh. u. Gynäk.*, 1914, lxxv, 760.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Ectopic decidua has been observed on and in the ovary, on the peritoneum of the uterus—mostly its posterior surface—on the pelvic peritoneum—especially in Douglas' pouch—more rarely on the parietal pelvic peritoneum, on the anterior wall of the uterus, the vesico-uterine space, on the ligaments of the uterus, on the omentum, the small intestines, the vermiform appendix, on the mucous membrane of the tube even in intra-uterine pregnancy, in the cervix and vagina, in polyps, adenometritic foci, proliferating scars, and on adhesive bands, and very rarely on the peritoneum of the tube. It is not a physiological condition. The chief factor in its causation is probably a preceding inflammation. MORALLER.

**Albrecht, H.: Asthenic Infantilism of the Female Genitalia and Its Significance in Medical Practice** (Der asthenische Infantilismus des weiblichen Geschlechts und seine Bedeutung für die ärztliche Praxis). *Med. Klin.*, Berl., 1914, x, 628.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Asthenic infantilism is a hypoplastic anomaly of constitution, characterized by the persistence of infantile and juvenile forms of growth with functional weakness and increased susceptibility to disease of the organs involved. The author follows Mathes' views. He describes the infantile forms of the bones, blood-vessels, and genital system. One particularly important manifestation of it is enteroptosis, the etiology of which is found in the formation of the thorax and spinal column and in asthenia of the entire stratum fibrosum. The external appearance is characterized by slenderness of the body, languid position, and pallor and flaccidity of the skin. More important than these physical signs are infantile and asthenic symptoms in the psychic and nervous systems, especially neurasthenia and psychasthenia.

He discusses briefly the functional inferiority of the different systems of the body and the increased susceptibility to disease in the genital system, mentioning, in this connection, frequency of abortion, severe disturbances during pregnancy, contracted pelvis, rigidity of the soft parts in delivery, deficient contractions, the frequency of retention of the placenta and atony, a tendency to prolapse, the predisposition of the infantile tubes to extra-uterine pregnancy, etc. Of yet greater im-

portance are the clinical pictures due to asthenia of the psychic and nervous systems. These are characterized by alternating periods of well-being and severe illness without any organic changes. There are especially apt to be symptoms of the stomach, intestines, and genital tract, frequently combined. From the manifold variations of the symptoms of asthenic infantilism it is clear that a large percentage of all female patients might fall in this category. The author gives a warning against local, and especially operative, treatment in such cases. This is especially to be observed in appendicitis, movable kidney, and retroflexion of the uterus. Permanent results cannot be gained by surgery; only a rational psychotherapy can save these women from the hands of the quacks, into whose care they so frequently fall. RUHEMANN.

**Herrmann, E.: The Clinical Significance of Changes in the Female Genitalia, in Status Hypoplasticus** (Die klinische Bedeutung der Veränderungen am weiblichen Genitale beim Status hypoplasticus). *Gynäk. Rundschau*, 1914, viii, 14. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

On the basis of 203 cases the author comes to the conclusion that among the signs of constitutional anomaly are changes in the ovary, among them being abnormal size, smoothness of the surface, and connective-tissue hyperplasia with disturbance in the function of the follicular system. The biological inferiority in 56.15 per cent of the cases of status hypoplasticus causes general hypoplasia of the genitals, and as a result, in 54.45 per cent of the cases, primary sterility. GRÜNBAUM.

**Nessmelowa, S. N.: Changes in the Blood during Menstruation** (Beiträge zu den Veränderungen des Blutes durch die Menstruation). *Dissertation*, Tomsk, 1913.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports a series of blood examinations in 22 normal women of the same age and living under practically the same conditions. Examination was made for changes in the number of the erythrocytes and leucocytes, the resistance of the red blood-cells to salt solution, and the viscosity. The blood of each individual was examined daily for a month. There were four periodic phases in the blood picture in women: the normal, or intermenstrual, lasting on an average thirteen days; the premenstrual, about 6 to 7 days; menstrual and post-menstrual, each lasting about 4 days.

In the normal type of menstruation there were variations in the erythrocyte count of from 500,000 to 1,500,000. On an average there was an increase in the erythrocyte count to 188,000 above the normal, 3 to 9 days before the beginning of the menses. During menstruation the number of erythrocytes was slightly increased over normal. At the beginning of the post-menstrual period the number of erythrocytes increases again, then gradually grows smaller until it reaches the intermenstrual figure.



The percentage of hæmoglobin runs parallel to the erythrocyte count, but shows slighter variations. With a sudden increase in the number of erythrocytes the color index sinks. The variations in the leucocyte count run parallel in a general way with those in the red cell count. All the forms except the mast-cells take part in the increase.

The absolute number of neutrophile cells is increased in the premenstrual period, but to a less degree than the other forms. The number of small and large forms of leucocytes shows a sudden rise; the transitional forms are the ones most affected in the rise of the mononuclears. The eosinophiles are increased about 1.4 per cent over the intermenstrual period.

During the menses the leucocytes show the lowest count; this relative leucopenia is caused by a decrease in the number of the polynuclear leucocytes. In the post-menstrual period it is chiefly the latter that are increased. It is an interesting point that, in many cases, if the menstrual discharge is delayed, the changes in the blood picture nevertheless take place at the accustomed time. Then, when the discharge takes place, the changes in the blood picture are slighter, sometimes scarcely noticeable. This would indicate that the menstrual bleeding as such is not the cause of the changes. Probably the glands of internal secretion are involved in it. The kinds of changes in the blood would indicate this also, as there are resemblances in many points to the blood changes in diseases of the thyroid, the hypophysis, and the thymus, and anaphylactic conditions are manifested. The minimum resistance of the red blood-cells to salt solutions in the intermenstrual period was 0.49 to 0.52; the maximum, 0.33 to 0.36 NaCl; the degree of resistance showed variations during the premenstrual period. At the time of menstruation the minimum resistance was 0.49 to 0.55; the maximum, 0.3 to 0.39 NaCl. In the post-menstrual period only the maximum resistance was increased. Viscosity in the interval was 3.5 to 4.5"; it is increased in the pre-menstrual and decreased during the menstrual period. There was an increase in coagulation time during menstruation, a decrease in the pre-menstrual period.

WAEBER.

**Deutsch, A.: The Treatment of Hæmorrhage in Adolescence with Pituglandol** (Die Behandlung der Adoleszenten-blutungen mit Pituglandol). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 545.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In cases, chiefly in young girls, in which the usual styptics failed, almost certain hæmostasis was attained by the use of pituglandol. Hoffman-la Roche's pituglandol was used and, ordinarily, 15 to 20 subcutaneous injections of 1 ccm. were sufficient. Intervals of one to three days were left between the doses. If the hæmorrhage did not stop completely after this treatment, at the end of one to four weeks another series of injections was begun, and the desired results were always obtained.

The general condition improved, and harmful effects were never observed, although in some cases as much as 45 ccm. was given altogether. The author recommends that preparations of hypophysis be used in all genital hæmorrhages in young girls, before radical treatment, such as castration, amputation of the body of the uterus, or röntgen treatment is decided upon.

BENTHIN.

**Brugnatelli, E.: Interstitial Cells and Internal Secretion of the Mammary Gland** (Cellule interstiziali e secrezione interna della mammella). *Fol. gynec.*, 1914, ix, 117.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

With different methods of staining, the author found two classes of fat-containing connective-tissue cells in the mammary glands of pregnant women. One kind represents a series of transition forms to Unna's, metachromatic mast-cells and probably contains lipid phosphates. The same cells were found in pathological tissue by Huguenin and by Ciaccio, who called them mastlipoid cells. The second class of cells contain in their interior glycerine and cholesterol and in their peripheral part phosphates, and in arrangement and structure they have the greatest similarity to the cells of the corpus luteum of pregnancy and the zona fasciculata of the adrenals. Just as the latter are regarded as typical cells of internal secretion, the author is inclined to regard the similar cells of the mammary gland as producers of hormones. As a hypothetical result of his work he suggests the origin of the interstitial cells of the mammary gland and reproductive glands from adventitial or wandering cells.

WEISHAUP.

**Hedinger, E.: Significance of Presenile Involution of the Mammary Glands** (Zur Bedeutung der präsenilen Involution der Brustdrüse). *Berl. klin. Wchnschr.*, 1914, li, 517.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports five cases in which the mammary glands were removed on account of pain in the breast. The women were all of middle age, and pathological anatomical examination showed the picture of presenile involution.

The author discusses the different forms of mastodynia: localized tumor, chronic mastitis, mastodynia without tumor formation according to Baumgartner's classification. He sees a further possible cause of painful mamma in presenile involution, but, in such cases, he is unable to tell whether there is a relation to the rest of the sexual apparatus or to other changes in the body.

ENGELHORN.

**Bauereisen, A.: The Significance of Bacteriological Examination before, during, and after Gynecological Operations** (Die Bedeutung bakteriologischer Kontrolluntersuchungen vor, während, und nach gynäkologischen Operationen). *Beitr. z. Klin. d. Infektionskrankh. u. z. Immunitätsforsch.*, 1914, ii, 463.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author made careful bacteriological examinations in 340 operative cases from the Kiel Gynecologi-



cal Clinic: 254 laparotomies, 41 major vaginal operations, and 45 operations of different kinds. He insists that the vagina be disinfected in every vaginal operation. Bacteriological examination is important in the prognosis. If the field of operation is free from bacteria the post-operative course is generally favorable. The peritoneum is best protected from bacteria by conservative treatment, by careful covering over of all cut surfaces with peritoneum, by washing out of the spaces with fluid, and by the avoidance of intraperitoneal tampons.

Especial demands are made on technique when it is necessary to combat endogenous bacteria, carcinoma, and tumors of the adnexa. In such cases the technique is the decisive factor in the result. Bacteriological examination of the abdominal wound as well as of the peritoneum, at the end of the operation, frequently showed micro-organisms, which came chiefly from the skin and from the scattering of endogenous bacteria; therefore, special stress is laid on the method of preparing patients for gynecological operations.

On the evening before the operation, the patient is given a full bath and bichloride compresses are placed on the abdomen; the next morning, just before the operation, the vulva is rubbed with iodobenzine and the vagina is irrigated and rubbed with a 1 per cent bichloride and 70 per cent alcohol solution; a 7 per cent tincture of iodine solution is used for the skin of the vulva; and the abdominal wall is given a vigorous rubbing with iodobenzine and a 7 per cent solution of tincture of iodine. Then the skin is covered with a cloth with a slit in it padded with Billroth's gauze, so that only a little of the skin is visible. After opening the abdominal cavity the entire abdominal wound is surrounded with slit Billroth gauze. The author believes the results of all operative treatment depend on asepsis and technique.

EBELER.

**Henkel, M.: Irradiation in Gynecology; the Treatment of Carcinoma of the Uterus** (Zur Strahlentherapie in der Gynäkologie. Die Behandlung des Uteruscarcinoms). *München. med. Wchnschr.*, 1914, lxi, 227.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The latest experiments show that the mesothorium rays do not have an elective effect on the carcinoma cells, and that the optimum dosage is between 100 and 200 mg. mesothorium. Above this there may be severe injury to the tissues, so much so as to even threaten life. The effect of the mesothorium does not penetrate more than 4 to 5 cm.

Keetmann and Mayer's experiments show that lead filtration is absolutely contra-indicated, since the loss of  $\gamma$ -rays is 21 per cent, in contrast with 3

per cent with brass. Also the  $\gamma$ -rays held in the lead filter undergo such a transformation that they become similar to  $\beta$ -rays, and like these have an injurious effect on the superficial tissues. When the brass filter is used the few secondary rays formed can easily be excluded by the use of a rubber covering.

The technique of the gynecological clinic at Jena is described. Many inoperable carcinomata after a time become movable and can be removed by operation. Vaginal total extirpation is preferred. The remnants should then be treated by further irradiation or intravenous injection of enzytol. Vaccine therapy may also be used for metastases and cancerous glands. The primary tumor is macerated and subjected to autolysis and the material obtained is used for vaccination.

Röntgen treatment may also be used with a new apparatus which enables colossal doses to be given in a short time at a comparatively low cost. This is sometimes given in connection with Krukenberg's proposed injection of calcium tungstate behind the carcinoma, designed to increase the activity of the röntgen rays.

K. HOFFMANN.

**Blumenfeldt, E. and Dahlmann, A.: The Electrometrogram in Animal Experiments** (Zur Kenntnis des tierischen Elektrometrogramms). *Ztschr. f. Geburtsh. u. Gynäk.*, 1914, lxxv, 493.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Theilhaber first tested the electrical current of the female uterus by means of the string galvanometer and originated the term "electrometrogram."

The authors, in testing Theilhaber's results on women in the puerperium, did not get uniform results. They tried, therefore, by animal experiments, to determine whether, on stimulation of the uterus, there is a connection between the visible contractions of the uterus and the curves shown by the string galvanometer. They experimented by Franz' method on the uteri of rabbits and dogs *in vivo*. They give a detailed description of the experiments.

The results showed that the spontaneous contractions of the uteri in rabbits which had been delivered, or artificially produced contractions, could for the most part be readily registered mechanically. At the same time curves were always visible on the string galvanometer, and they appeared a little bit earlier than the visible contractions of the uterus. Therefore, it is certain that there is a connection between the electrical and mechanical condition of the uterus. The accurate analysis of the curves published demands a yet more extensive experimental study.

RUHEMANN.

# OBSTETRICS

## PREGNANCY AND ITS COMPLICATIONS

**Beckmann, W.: Advanced Extra-Uterine Pregnancy** (Über Extrauterin gravidität in den letzten Schwangerschaftsmonaten). *J. akush. i. jensk. bolies.*, St. Petersburg, 1914, xxix, 181.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Prawossud in 1910 collected 190 cases of advanced extra-uterine pregnancy from the literature; the author adds 37 new ones from the literature and two of his own. The first case was a 7-months' abdominal pregnancy, after rupture of the left gravid tube at about the second month. Laparotomy was performed, followed by peritonitis and death.

The second case was also an abdominal pregnancy continuing to develop after rupture of the tube. Because of intimate adhesions to the intestines it was not possible to remove all the placenta, and the patient died of progressive peritonitis, resulting from necrosis of the fragments of placenta.

The clinical diagnosis of advanced extra-uterine pregnancy is difficult; it is easy to demonstrate that there is an ectopic pregnancy, but its exact topography can seldom be determined even under anaesthesia. The most important symptom is very severe and constant pain in the abdomen. There is no unanimity as to treatment; some authors advise immediate operation, others prefer expectant treatment.

The author points out the great dangers of expectant treatment and advises immediate operation. The operation may consist in complete removal of the placenta or in suturing it to the abdominal wall. The former is to be preferred, as it is a more correct surgical procedure. Marsupialization should be performed only when complete extirpation is technically impossible.

B. OTTOW.

**Hoehne: Intra-Uterine Pregnancy, after Extra-Uterine Pregnancy** (Intrauterin gravidität nach vorausgegangener Extrauterin gravidität). *Monatsschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 354.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In spite of the fact that normal intra-uterine pregnancies were observed after extra-uterine pregnancy in 50 per cent of the cases, the changes in the tubes in extra-uterine pregnancy should not be underestimated. Hoehne showed by projection pictures of the injected tubes that there was peripheral and central smoothing out of the folds, intramuscular branching of the lumen of the tube and, in one case, complete atresia of the tube.

The following conclusions are reached: It is a mistake (1) to simply remove the ovum from the pregnant tube and leave the tube; (2) to amputate

the pregnant tube and leave a larger or smaller stump of the tube attached to the uterus; (3) to perform plastic operations on the opposite non-pregnant tube, unless the patient wishes to preserve every possibility of conception and takes upon herself the risk of another extra-uterine pregnancy.

EHRENBERG.

**Rouvier, J.: Coexistence of Intra- and Extra-Uterine Pregnancy, Interrupted Simultaneously at the End of Three Months; Recovery without Operation** (Coexistence de grossesses extra et intra-utérine, interrompues simultanément au début du 3<sup>e</sup> mois. Guérison sans intervention opératoire). *Bull. Soc. d'obst. et de gynec. de Par.*, 1914, iii, 92.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The patient was a 37-year-old VI-para in the ninth month of pregnancy. The diagnosis on admission was retention after abortion. The last menses had been in September, 1913, with slight loss of blood in October and November. At the end of November, abortion occurred. Afterwards there was increasing pain and signs of an infectious abortion with retention; a resistant circumscribed intra-abdominal tumor was found, sensitive to pressure. The cavity of the uterus was empty and 6½ cm. long. From Douglas' pouch a fluctuating zone could be felt surrounding the tumor. The diagnosis was: retro-uterine hæmatocele after extra-uterine abortion; afterwards uneventful intra-uterine abortion. After expectant treatment there was a gradual disappearance of all symptoms without operation.

The author holds that nothing more than a probable diagnosis can be made, at least not before the third month. The abdominal abortion must have preceded the intra-uterine one. He warns against too vigorous treatment in such cases. In the hospital, expectant treatment should be given and if infection occurs, colpotomy and drainage should be done. Outside the hospital, laparotomy must be performed. Some of the participants in the discussion doubted the correctness of the diagnosis.

HESSE.

**Bogdanovits, M.: Twin Pregnancy with One Living Child Inside, and One Outside, the Uterus** (Zwilling-Gravidität mit intra- und extrauterinem lebendem Kinde). *Orvosi Hetilap.*, 1914, lviii, 292.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Twenty-two days after the birth, outside of the hospital, of a living full-term boy, the mother was operated on at the hospital for extra-uterine pregnancy and a living full-term girl delivered. This child lived only a few minutes after the operation. It is noteworthy (1) that the woman had already



had one pair of twins of different sexes; (2) that a corpus luteum was found only in the left ovary (the extra-uterine pregnancy was on the left side); (3) that in this case both the children were full-term and living. The extra-uterine child did not attain full development until twenty-two days after the intra-uterine one, and was not viable, in spite of the fact that it survived the delivery of the intra-uterine child.

FRIGYESI.

**Gray, A. L.: Eclampsia.** *J. Mo. St. M. Ass.*, 1914, x, 461.  
By Surg., Gynec. & Obst.

The author of this paper gives a brief but clear description of eclampsia. He first considers the etiology of this condition, and is of the opinion that the poisonous substance is generated in several locations, and three organs especially; viz., liver, placenta, and intestinal tract.

Next he considers the symptomatology of eclampsia, and lays great stress on a blood-pressure of 150 or above. The author believes that eclampsia seizures can be prevented in almost every case, and when such seizures occur, it is due, in 95 per cent of cases, to causes discoverable and preventable by the physician, or to inattention or indolence on the part of the patient.

As a proof of the above assertion he states that since making this a special work, he has had but two cases of eclampsia in the last 1,100 births, and in both of these cases he had no previous knowledge of the cases until one week before labor, and that the time for elimination and treatment was too short.

In considering treatment, Gray divides it into three stages: First, preceding attacks and during the manifestation of prodromal symptoms; second, during attack; third, following attack.

The primary object of all lines of treatment, whether during the prodromal stage or following the attack, is lowering the blood-pressure. The author believes that eclampsia cannot be scientifically treated without the use of a blood-pressure apparatus. It is both the diagnostician and prognosticator. A blood-pressure of less than 150 means comparative safety. His method of lowering the blood-pressure is to cause elimination through the skin, kidneys, and bowels. This may be accomplished, first, by hydrotherapeutic measures; second, by drinking large quantities of water; and third, by a variety of cathartics, preferably licorice and jalap powder compound, or instead, cream of tartar, mineral water, Epsom salts, etc.

He next considers the treatment of the seizure itself and has the strongest faith in the radical treatment when in the hands of a skilful operator. In a normal pelvis he advocates manual or instrumental dilatation, version or forceps, in preference to cesarean section. Regarding the treatment, after delivery, especially those cases in which convulsions continue, he believes there is no better means of lowering the blood-pressure than blood-letting. This is especially indicated in the plethoric, full-blooded patient, with large, full, bounding pulse.

A. H. SCHMITT.

**Pisani, S. and Savarè, M.: Cholesteræmia and Wassermann's Reaction in Eclampsia** (Colestèrinemia e reazione di Wassermann nelle eclampistiche). *Ginec.*, 1914, x, 601.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Hypercholesteræmia always occurs in patients with eclampsia to a greater degree than in normal pregnant women. Hypercholesteræmia never gives a completely positive Wassermann reaction, but only partial reactions, which is due to the anti-hæmolytic and anticomplementary properties of the cholesterin. Cholesterin is not to be compared with a syphilitic antibody, and probably increases as a result of hyperfunction of the adrenals and dysfunction of the liver. The significance of the placenta in hypercholesteræmia is under discussion; retention, rather than hyperproduction deserves more study. In the 16 experiments performed by the author, the more pronounced the symptoms the greater was the degree of cholesteræmia. There is a detailed discussion of the literature.

MESTRON.

**Ferré: A Series of Recent Cæsarean Operations** (Sur une série d'opérations césariennes récentes). *Ann. de gynec. et d'obst.*, 1914, xli, 160.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports 12 cæsarean sections. One child died on the fifth day. One mother, on whom cæsarean section was performed for the second time, and who had been in labor three days before the operation, died. The uterus was removed; the old scar was thin as parchment, but firm. Three women had fistulæ from the uterus through the abdominal wall. In one woman a compress was left in the abdominal cavity, which after 7 weeks was discharged from the rectum, accompanied by colicky pains.

JAEGER.

**Wolff: Rupture of the Uterus in the Scar Left by Cervical Cæsarean Section** (Uterusruptur in der alten Kaiserschnittnarbe nach cervicalem Kaiserschnitt). *Ztschr. f. Geburtsh. u. Gynäk.*, 1914, lxxv, 740.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports the case of a 30-year-old II-para, in which a cervical cæsarean section was done, at the end of pregnancy, for contracted pelvis. The longitudinal incision of the cervix had to be prolonged into the body, and the living child was extracted by the foot. The puerperium was febrile. Healing was by second intention. A year later the patient was again admitted to the hospital at the end of pregnancy. Rupture in the old scar had occurred during the first stage of labor, during which the child died. The uterus was totally extirpated. Brain embolism occurred during the puerperium. The patient is still under treatment. Microscopically, the cicatricial tissue was infiltrated with decidua almost to the serosa.

In 48 cases from the literature, of rupture in the scar of a cæsarean section; the puerperium after the cæsarean section was almost always febrile,

as it was in the above case. Union does not take place, the muscle-bundles do not regenerate, and the scar is poorly consolidated. In the case reported, there were unabsorbed catgut sutures in the specimen from the operation a year before. In the 49 cases, the infantile mortality was 60 per cent and the maternal mortality 26 per cent, as contrasted with 46 or 47 per cent in other ruptures of the uterus. The more favorable results of rupture in scars from cæsarean section is due to the fact that they generally take place in the hospital. Porro's operation is generally used in the treatment. FETZER.

**Fuchs, H.: Cæsarean Section for Total Ankylosis of Both Hip-Joints** (Kaiserschnitt wegen totaler Ankylose beider Hüftgelenke). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 477.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A 30-year-old woman had had a spontaneous delivery 6 years before her present pregnancy. She had had an abortion before the first delivery and an abortion three years ago with severe symptoms of sepsis—metastatic pyæmic suppuration in the region of both hip-joints. Finally she recovered but had bilateral ankylosis of the hip-joints. She was a slender woman, 146 cm. tall; she had no abnormalities in the pelvis, but the soft parts were somewhat atrophied. With both thighs fixed in slight flexion, with marked adduction and rotation inward, vaginal exploration with two fingers could be performed only with great difficulty. The posterior edge of the pelvic outlet, however, could be reached tolerably easily in the lateral position at about the middle of the ramus of the pubis. The woman wanted a living child. The child was in breech position. Abdominal transperitoneal cæsarean section was performed and a living, full-term girl delivered. The puerperium was afebrile.

Only four cases are described in the literature of delivery in bilateral ankylosis of the hip—two were spontaneous deliveries and two were delivered by cæsarean section. The author believes that cæsarean section is not justified in head presentations, as normal delivery in the lateral position is quite possible. The chances of delivering a living child by the natural route are much less favorable in breech presentations. Because of the difficulty of access to the pelvic outlet, cæsarean section is indicated in the interests of the child. HARM.

**Lindemann, W.: Vaginal Cæsarean Section in Placenta Prævia** (Über die Anwendung der Hysterotomia anterior bei Placenta prævia). *Prakt. Ergebn. d. Geburtsh. u. Gynäk.*, 1914, vi, 163.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In the treatment of placenta prævia by cæsarean section the author prefers the vaginal route. Its advantages as contrasted with the abdominal route are better cosmetic effect and avoidance of hernia and suppuration of the wound. It has the advantage over extraperitoneal cæsarean section of being easier to perform. With it, injuries of the bladder are

almost impossible. It may be complicated by insertion of the placenta in the cervix, but such cases are rare. The dangers in placenta accreta are the same in the vaginal and abdominal operation, otherwise the insertion of the placenta is not of any special importance. The loss of blood is not great. The operation itself does not offer any great difficulty. Conditions for its use are more unfavorable in primiparæ. If the vaginal operation is not practicable in these cases, abdominal cæsarean section is to be recommended.

Among 31 cases of vaginal cæsarean section only one patient died from an unknown cause, making the mortality 3.2 per cent. The maternal morbidity was 64.1 per cent. In 35 per cent of the cases the insertion of the placenta was central, in 65 per cent marginal. There were 32 children. Three of them had died before labor, one, a non-viable twin, was born dead; 9 died after delivery, 3 of inanition, 4 of rupture of the tentorium, one of a disease, probably syphilis, and one from an unknown cause. Deducting the non-viable ones, the infantile mortality was 24 per cent. BENTHIN.

**Polano, O.: Further Experience with Posterior Cervical Cæsarean Section** (Weitere Erfahrungen mit der Section caesarea cervicalis posterior). *München. med. Wchnschr.*, 1914, lxi, 818.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author describes 7 of his own cases. Twice there was severe eclampsia, once the posterior cervical cæsarean section was repeated in a woman who had been operated upon in the same way two years before, one case was slightly infected, and in three cases there were adhesions of the anterior wall of the uterus following a preceding cæsarean section above the symphysis. In the first case there was death from eclampsia.

The method proved good in all the cases. The objections that have been urged against it are: (1) Possibility of injuring the child by making its breathing difficult by constriction of the vessels through pressure of the uterus against the symphysis. (2) Severe hæmorrhage as a result of stasis. (3) The dangers due to the large incision.

The answers to these objections are as follows: (1) The operation is carried out rapidly, the child needs little oxygen, and the constriction of the vessels is not complete. Among 22 cases there was never asphyxia of any of the children. (2) There is not much danger of hæmorrhage, as the incision in most cases is far away from the site of the placenta, and it can easily be constricted by traction on the uterus; moreover, an intact myometrium contracts better and more quickly than an incised one. (3) In the majority of cases a small abdominal incision is sufficient, beginning 3 to 4 finger-breadths below the umbilicus and continuing upward to a little above it.

Drainage of Douglas' pouch in unclean cases is superfluous, since it is easy to inspect the true pelvis with the uterus anteverted and to cleanse it from



any infection; but drainage through Douglas' pouch for the sake of added safety is always possible. Posterior cervical cesarean section has shown its special value for certain classes of cases, such as those where there are adhesions between the anterior wall of the uterus and the abdominal wall, pendulous abdomen, or undilated os.

MORALLER.

**Lawrence, E. J.: Impassable Contraction of the Gravid Uterus; Report of One Case Verified by Cesarean Section; Dilatation of the Stomach; Recovery.** *Northwest Med.*, 1914, vi, 169.

By Surg., Gynec. & Obst.

Lawrence reports a case of dystocia due to impassable contraction ring verified by cesarean section. He further states that in all the literature upon this condition during the past 10 years, only 4 other cases have been confirmed by this operation.

The treatment, he adds, depends upon the degree of obstruction, for there are many cases where a well-formed Bandl ring can be diagnosed—in these a dose of morphia or an anæsthetic will relax the spasm. Forceps delivery in such cases is easy, provided there are no other complications.

In extreme cases the use of forceps is either very difficult or impossible because the head is well above the brim. If an application is successful, the forceps will slip, or if traction of any degree is made, the uterus is dragged down tightly over the fœtus.

Incision of the contraction ring has been done, but is a very difficult and dangerous procedure. Cesarean section offers the ideal treatment for this condition. Embryotomy should be done if the baby is dead.

HARVEY B. MATTHEWS.

**Brodhead, G. L.: Cesarean Section for Double Multilocular Ovarian Cyst.** *N. Y. M. J.*, 1914, xcix, 1192.

By Surg., Gynec. & Obst.

The case reported had had a difficult labor with a stillbirth previously. In the last pregnancy an ovarian tumor was pushed down into Douglas' cul-de-sac, on account of which a cesarian section was performed and the tumor removed with an uneventful recovery. The author suggests the possibility of replacing these tumors by posture, or removing them by vaginal section, if they appear about the sixth month.

D. H. BOYD.

**Rohrbach, W.: Results of Examinations after Extraperitoneal and Transperitoneal Cesarean Section** (Nachuntersuchungsergebnisse nach extra- und transperitonealem Kaiserschnitt). *Ztschr. f. Geburtsh. u. Gynäk.*, 1914, lxxv, 530.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author examined 33 patients among 87 which were operated on by extraperitoneal cesarean section, and 5 among 18 transperitoneal ones. There were rarely symptoms after operation and even when there were they disappeared after a short time. The capacity for work was not decreased. No disturbances of bladder function were observed.

Hernias in the scar were found in 8 per cent of the cases: two after extra- and one after transperitoneal

section. They are best avoided by the lateral oblique incision on the left and extraperitoneal operation with suitable after-treatment. The cervical scars were absolutely firm and resistant to the dangers of renewed pregnancy, more so than the body scars. Adhesions and bands between the cervix and the abdominal wall were never observed in spite of the fact that gauze drainage was used in the open wounds, and about half of the cases were infected or open to the suspicion of infection.

In 82 per cent of the cases of extraperitoneal section the position of the uterus remained normal after the operation. Abnormal positions occurred, but were easily corrected, as the uteri were movable. The primary viability of the children was 100 per cent, and 81 per cent of them were living at the end of the year. The results are good. The most important point in the prognosis of cesarean section is to operate extraperitoneally.

HERZOG.

**Van Cauwenberghe, A.: Advantages of Artificial Premature Delivery** (Utilité de l'accouchement prématuré artificiel). *Rev. mens. de gynéc., d'obst. et de pédiat.*, Bordeaux, 1913, xviii, 729.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author gives a historical review of the development of artificial premature delivery, and discusses in detail the indications for this procedure. Among the methods of carrying it out he gives simple puncture of the membranes, the induction of contractions of the uterus by intramuscular injection of pituitrin, the introduction of an elastic bougie between the membranes and the wall of the uterus, and, finally, the artificial dilatation of the cervix with, or without, the introduction of a bag in the lower uterine segment. He concludes:

1. Artificial early induction of labor is of great value in cases of contracted pelvis and is without danger for mother and child if performed at the right time by a method adapted to the case in hand.
2. Children born in this way have to be handled with special care, and breast feeding is essential.

3. If artificial early delivery is to be considered the pelvis must be large enough so that labor need not be induced till the thirty-fourth week; this is the only way to avoid high direct and indirect mortality of the children.

4. If the pelvis is so much contracted that the child can not be delivered in this way at the thirty-fourth week, for the sake of the child some other method must be selected that permits of longer waiting.

BAYER.

**Lienau, A.: Artificial Abortion in Psychoses from the Psychiatric, Medicolegal, and Ethical Points of View** (Über künstliche Unterbrechung der Schwangerschaft bei Psychosen in psychiatrischer, rechtlicher, und sittlicher Beleuchtung). *Arch. f. Psychiat.*, Berl., 1914, liii, 915.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

On the basis of 39 cases the author comes to the conclusion that artificial abortion is indicated in

psychoses in all cases where the continuance of pregnancy seriously and permanently endangers the mother's psychic condition, and where the family physician and the psychiatrist believe that by interrupting the pregnancy the danger to the mother can be avoided. Artificial abortion should be induced more frequently than has heretofore been done in cases of "true" mental disease. In the severe depression of psychopathic cases, institutional treatment is to be preferred to abortion in some cases.

A. HIRSCHBERG.

**Benthin, W.: How Can Bad Results Be Avoided in Febrile Abortions** (Wie kann man üble Ausgänge bei fieberhaften Aborten am besten vermeiden)? *Deutsche med. Wschrhchr.*, 1914, xl, 798.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

To avoid severe illness or death in the after-treatment of febrile abortions it is necessary to exclude from active treatment the cases complicated by para-uterine disease, and for this purpose careful examination is necessary. Among 30 such cases 7 were treated actively with 3 deaths, and 23 conservatively with 4 deaths.

The bacteriological findings must be taken into consideration, for the danger is greater if hæmolytic streptococci are present. According to the experience of the Königsberg gynecological clinic the results of expectant treatment are much better in such cases than those of active treatment. The danger from retained remnants of the ovum are exaggerated. The permanent results from active and expectant treatment are equally good.

If hæmolytic streptococci are present, conservative treatment is to be recommended if possible: rest in bed, ergotin, and diet. Severe hæmorrhage necessitates emptying of the uterus in 8 to 10 per cent of the cases, and when necessary it should be done with the finger and as conservatively as possible.

BONDY.

**Prusik and Tuma: The Blood Ferments in Pregnancy and Disease** (Über das Verhalten der Blutfermente im Verlaufe der Schwangerschaft und Krankheiten). *Lék. rozhledy*, 1914, xxi, 129.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The authors give the results of 121 tests of blood sera with 20 different organs as antigens. The blood serum of pregnant women was tested with placenta in 56 cases with 53 positive and three negative results; of these three, one reacted positively a second time, one came from a woman five months after a miscarriage, and the third from a woman in the third month of pregnancy; the first two cases were excluded from the results. The results were positive therefore in 94.6 per cent, and after the correction in 98.1 per cent of the cases. The same placenta tested with the same serum several times always gave the same results.

The sera from four pregnant women with nephritis, catabolized kidney, as did also that from a case of hyperemesis gravidarum. The serum of two cases

of eclampsia catabolized the placenta of other cases as well as their own, and among the other organs had the strongest effect on the liver; the kidney tissue was not catabolized. Ten cases of fibromyoma tested with the serum of pregnant patients gave 3 negative and 7 positive results.

The sera of men and non-pregnant women with carcinoma was tested in 31 cases; there were positive results in 74 per cent of the cases with carcinomatous organs and positive results in 63 per cent of the cases with placenta. The specificity of the reaction was controlled by 20 experiments with serum from males and 22 cases that were certainly not pregnant; in 43 per cent of the cases the placenta was catabolized.

In discussing methods the authors point out the importance of medical treatment in the results; after potassium iodide and fibrolysin the sera catabolized various organs. As to the quantity of the reaction, they repeated the tests after 24 and 48 hours. Dialysis repeated after 24 hours (40 cases) showed positive results in 50 to 60 per cent of the cases that had been positive the first time; after 48 hours they were all negative.

PRŮŠKA.

**Frankenstein, K.: Hæmorrhage during Pregnancy** (Blutungen in der Schwangerschaft). *Fortschr. d. Med.*, 1914, xxxii, 349.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Hæmorrhage in the beginning of pregnancy may be the result of general disease of the mother, of endometritis, or of attempts at abortion. There is generally displacement between the ovum and the wall of the uterus, and hæmorrhage between the ovum and the mucous membrane, or even in the membranes of the ovum. The prognosis as to life is generally good. As to treatment, the author recommends early emptying of the uterus followed by tamponing.

Among hæmorrhages that may occur at any time during pregnancy, he counts the hæmorrhages resulting from tumors in the uterus and hæmorrhage from hydatidiform mole. These endanger the mother's life much more because the hæmorrhage is often very severe. The treatment consists in operation for the myoma, and abortion. If pregnancy is complicated by carcinoma, in operable cases total extirpation should be performed at once; in inoperable cases delivery should be accomplished by cæsarean section at the end of pregnancy. As soon as the diagnosis of hydatidiform mole is made the uterus should be emptied. After the abortion the patient should be carefully watched to prevent later hæmorrhages. After dismissal she should still be kept under observation in order to make an early diagnosis of chorio-epithelioma if it appears.

Among hæmorrhages in the last three months of pregnancy, he counts hæmorrhages from varices, from rupture of the uterus, from placenta prævia, and from premature separation of the normally situated placenta. Both of the latter anomalies are discussed in detail. As soon as the diagnosis of



placenta prævia is made, the child should be delivered without regard to its viability. The author recommends as the best methods version or meiotomy. Cases of premature separation of the normally implanted placenta should be sent to the hospital for immediate operative delivery.

HÜFFELL.

**Sergeant, E.: Tuberculosis and Pregnancy** (Tuberculose et grossesse). *Rev. prat. d'obst. et de pédiat.*, 1914, xxvii, 47.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In regard to the influence of tuberculosis on pregnancy the author states that tubercular women seldom become pregnant, and that abortion is rare even in cavernous phthisis. In very advanced tuberculosis abortion occurs spontaneously, or during hæmoptysis or an attack of fever.

As to the influence of pregnancy on tuberculosis, opinions are divided. According to most authors pregnancy reduces the resistance of the body (chlorosis, decalcification, excretion of phosphorus). Frequently auto-intoxications appear from the liver, kidney, and adrenals. Decalcification and adrenal insufficiency occur both in tuberculosis and pregnancy, so there may be summation of the injury done. Torpid cases of tuberculosis may not be made any worse by the pregnancy, but progressive tuberculosis usually is. The latter part of pregnancy, the puerperium, and nursing are especially dangerous for the tubercular woman—labor itself is less so. In unfavorable cases the patients die two or three weeks post-partum with severe lung symptoms or of miliary tuberculosis, or, after a few weeks or months, the disease grows worse, and the patients slowly succumb to it.

Since tubercle bacilli have been found in the blood of the umbilical vein, direct transmission of tuberculosis from the mother to the child cannot be excluded; but infection in the family and inherited predisposition must also be considered. As 32 per cent of the children of tubercular mothers live, it is evident that artificial abortion should not be performed in pregnancy.

The author advises tubercular women not to marry or have children. If pregnancy occurs, steps should be taken to prevent decalcification, and adrenalin should be given. The child should be taken from the mother immediately after birth.

ISSEL.

**Imhofer, R.: The Present Status of the Question of Tuberculosis of the Larynx and Pregnancy** (Der gegenwärtige Stand der Frage der Kehlkopf-tuberkulose und Schwangerschaft). *Prag. med. Wchnschr.*, 1914, xxxix, 111.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author has determined from a study of the literature and his own cases that tuberculosis of the larynx is a relatively rare complication of pregnancy. Neither by clinical nor pathological-anatomical study could he demonstrate a predisposition of

pregnant women to tuberculosis of the larynx. The prognosis of tuberculosis of the larynx is extremely unfavorable. The mortality is 86 to 90 per cent. In cases of tuberculosis of the larynx and pregnancy for the first five months, abortion should always be induced and tubal sterilization performed. Pregnancy after the fifth month should be allowed to continue; and premature delivery should not be induced, as the results of premature labor are very bad.

The treatment of tuberculosis of the larynx during pregnancy should be limited to palliative measures. Tracheotomy should be performed in severe dyspnoea, but tracheotomy as a curative measure, which was formerly much in vogue, is now seldom recommended.

OERTEL.

**Rosenstein, M.: Appendicitis and Pregnancy** (Appendicitis und Gravidität). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 27.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Surgical treatment is much more to be commended in pregnancy than conservative treatment. If the appendicitis is mild, especially in the first half of pregnancy, the pregnancy should be maintained. Experience has shown, however, that after an abortion or premature delivery the prognosis is better, the earlier appendectomy is performed. If there are signs of a beginning abortion or of premature delivery, the appendix has first been successfully removed in many cases. Such a successful case is reported. The extremely high mortality of appendicitis in pregnancy can only be improved by early diagnosis and operation.

BENTHIN.

**Vautine: Simulated Appendicitis in Pregnancy** (Les fausses appendicites de la grossesse). *Ann. de gynéc. et d'obst.*, Par., 1914, xi, 222.

By Journal de Chirurgie.

Clinicians are so afraid of the frequency, the suddenness, and the rapid development of appendicitis in pregnancy that they probably make a diagnosis of appendicitis too readily. Pain in the right hypochondrium with contracture and rise of temperature may be found in many different kinds of affections. The author reports five cases where the diagnosis of appendicitis was wrongfully made. In the first there was a Meckel's diverticulum very near the appendix. In the second a dermoid cyst near the ovary was sutured and extirpated. In the third there was a true cyst of the right ovary. The fourth was a case of high extra-uterine pregnancy on the right side, coexisting with uterine pregnancy. The fifth was a cyst of the right ovary with a twisted pedicle.

L. CHEVRIER.

**Watson, J.: Three Cases of Gall-Stones Associated with Pregnancy.** *Guy's Hosp. Gaz.*, 1914, xxviii, 225.

By Surg., Gynec. & Obst.

The author recently had, as patients, three pregnant women who suffered "from the most terrible flatulence and indigestion, absolutely unrelieved by

drugs and diet." Six months later the first woman was operated upon, after several attacks of biliary colic. She recovered and has remained well.

The second patient was better for a year after the birth of her child, but the digestive disturbances returned and an operation showed a gall-stone and many adhesions. The stone was removed with the gall-bladder, but the patient died on the third day.

The third case had been delivered prematurely and after delivery became jaundiced; had clay-colored stools and bile in the urine. C. H. DAVIS.

**Ruge, Jr., C.: Gynatresias in Pregnancy** (Über Gynatresien in der Gravidität). *Arch. f. Gynäk.*, 1914, cii, 264.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

After discussing the literature of the subject, a case of occlusion of the internal os during pregnancy is described. On account of eclampsia and the fact that the occlusion was apparently caused by a tumor, total extirpation was performed in the sixth month of pregnancy.

The occlusion was not caused by a tumor but by a small arch of tissue which extended from the posterior to the anterior wall of the uterus. It was convexed downward, and covered over the whole cervical cavity. It was 1 to 5 mm. thick. Histologically, there was inflammatory erosion of the os and the squamous epithelium of the os extended high up into the cervix and there was marked inflammatory infiltration of the tissue. There was stratification and fenestration of the cervical and glandular epithelium in the upper part of the cervix. The bridge of tissue was made up for the most part of smooth muscle, no cicatricial tissue being visible. It was therefore a complete muscular occlusion of the internal os in pregnancy, resulting from an inflammatory process which had caused epidermization of the greater part of the cervix. No certain conclusions as to the age of the inflammation could be drawn from the microscopical picture, nor could the etiology of the disease be determined. The question remains open whether it was an infectious process or the result of an earlier birth trauma.

The author observed similar changes in the cervical epithelium in a second case of pregnancy, in which the uterus was removed on account of a large myoma of the cervix. Here, too, the histological picture showed stratification and fenestration of the cervical epithelium, which may be regarded as the result of inflammatory processes. The squamous epithelium of the os also extended high up into the cervix.

EISENBACH.

**Mühlbaum, A.: The Prognosis in Chorea Gravidarum** (Die Prognose bei Chorea gravidarum).

*Prakt. Ergebn. d. geburtsh. u. Gynäk.*, 1914, vi, 55.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Mühlbaum believes that chorea during pregnancy is really an unusual disease, but that it is more frequent than gynecologists believe, for the patients come to the neurologist for treatment oftener than

to the gynecologist. It is certain that there is a connection between chorea and rheumatism, but there are other causes of a sexual nature involved.

Mühlbaum distinguishes a mild and a severe form of the disease. The cases that develop slowly belong to the former class; 27.8 per cent of these mild cases recover during pregnancy, or the delivery is spontaneous and the patient is discharged cured a short time after. In the severe cases the chorea begins suddenly without premonitory symptoms. All the muscles—even those of the buttocks—are involved. There are generally symptoms of delirium or amnesia. There is frequently abortion or premature delivery and death usually follows within five days.

A severe case of chorea seldom occurs without fever; in almost every autopsy myo- or endocarditis is noted, evidently the signs of a latent rheumatism. Cases preceded by infantile chorea almost always have a favorable course. Recurrences of chorea in later pregnancies are severe. Rest in bed, isolation, hydrotherapy followed by scopolamine or chloral hydrate may be given, or ovaradentriferrin and injections of salt solution. As the muscle spasms disappear with the involution of the uterus, abortion may be indicated in severe cases, but even a rapid emptying of the uterus often comes too late.

Bonhoeffer believes in conservative treatment when there are symptoms of recent endocarditis, when there is fever, and when there have been other attacks of chorea that recovered spontaneously. In such cases he uses the treatment for the infection psychoses, abundant administration of salt solution and rich nutrition. The mortality of the mothers is between 20 and 30 per cent and that of the children between 40 and 70 per cent. The prognosis is favorable only in cases that have been preceded by juvenile chorea; it is always bad in cases where endocarditis or psychic symptoms are present.

KREBS.

## LABOR AND ITS COMPLICATIONS

**Meyer, L.: The Treatment of Labor in Contracted Pelvis** (Die Behandlung der Geburt bei verengtem Becken). *Ugeskr. f. Læger*, 1914, lxxvi, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In the treatment of labor in contracted pelvis no definite rules can be established depending on the degree of the contraction; the tendency is increasing to observe the course of the labor and to base the treatment on the facts observed. In 128 cases of contracted pelvis, delivery was spontaneous in 68, or 53 per cent.

Prophylactic measures, such as premature induction of labor, cesarean section at the beginning of labor, and prophylactic version, have a very limited field of usefulness, and can only exceptionally be used on primiparæ. The physician should wait and act only when long observation has shown that the disproportion cannot be overcome, or when



threatening conditions in the mother or child force him to deliver. The methods that can then be used are cesarean section, hebstectomy, and craniotomy.

In spite of the fact that the use of forceps is irrational in contracted pelvis, they can be recommended for slight degrees of contraction when the conditions are favorable. If an attempt at forceps delivery fails, craniotomy can be resorted to. As only the birth pains can overcome the mechanical resistance without danger, these powers must be allowed to act; and even if delivery is very painful, morphine must not be given. Rupture of the membranes must be avoided before the os is fully dilated. Nothing is gained by premature rupture of the membranes, and the danger of infection is increased.

In conclusion, Meyer gives a review of 128 cases of flat rachitic, generally contracted, and generally contracted flat pelvis from Oct. 1, 1908, to Sept. 30, 1913. There were 68 cases of spontaneous delivery, 53.1 per cent; cesarean section 18, 14 per cent; hebstectomy 5; cephalotomy 10; forceps delivery 17, 13.3 per cent; version and extraction 2; premature induction of labor 8.

Among the 17 cases of forceps delivery there were several cases of rachitic flat pelvis, where the head had already passed the contracted part, so it was no longer really a question of delivery from a contracted pelvis; and there were also several cases of forceps delivery at the pelvic outlet where delivery would have ended spontaneously if the physician had not been compelled to end it on account of threatening intra-uterine asphyxia or some other complication. In several of these cases operative interference would be avoided now by the administration of pituitrin.

S. A. GAMMELTOFT.

**Trey, R. de: Breech Extraction by Deventer-Mueller's Method** (L'extraction du siège d'après Deventer-Mueller). *Ann. de gynéc. et d'obst.*, 1914, xli, 146.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The delivery of the arm by Deventer-Mueller's method has the advantage of making any internal manipulation unnecessary. In the obstetrical clinic at Lausanne it was practiced for this reason, followed by delivery of the head by the Prague manipulation. The method is successful in the first and second degrees of contracted pelvis, and also with large children. Care must be taken that in the delivery of the body the shoulders occupy the largest diameter of the pelvis. The method is successful in 93.2 per cent of the cases; it fails only in abnormal positions of the arm and in extreme narrowness of the soft parts. The infantile mortality is markedly decreased; in the old classical method it is 22 per cent, in Mueller's method 6 per cent. Fractures of the arm also are decreased from 6.3 to 1.2 per cent.

Among 82 cases of Mueller's delivery of the arm there were two compound fractures of the cervical

vertebræ. The average time required for extraction by the classical method is 3 minutes; by Mueller's method the time is 2.4 minutes. Tears of the perineum are less frequent in the classical method (9.7 per cent) than in Mueller's (15.7 per cent). The author attributes this not to the delivery of the arm but to the Prague manipulation. Rise of temperature is less frequent in Mueller's method (3.5 per cent) than in the classical (46.4 per cent), which is due to the fact that in the former method there is no internal manipulation.

JAEGER.

**Pierra, L.: Three Cases of Severe Obstetrical Hæmorrhage Treated by Momburg's Method, with Success in Two Cases** (Trois observations d'hémorragies graves de la délivrance traitées par le procédé de Momburg, avec succès dans deux cas). *J. d. sages-femm.*, 1914, xlii, 66.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author describes two cases of severe hæmorrhage after delivery, in which the patient had fainted several times and the radial pulse could hardly be felt, both of which were stopped almost immediately by the application of Momburg's tube. In one case the hæmorrhage occurred after a forceps delivery, and could not be stopped by an intra-uterine tampon; in the other case the hæmorrhage followed a spontaneous delivery. The hæmostasis from the tube was so complete that a tear of the perineum could be sutured without a drop of blood flowing. In a third case the method failed, because severe heart symptoms appeared when the tube was applied; the patient had mitral insufficiency. She suffered such severe collapse that the tube had to be removed. The hæmorrhage was stopped in this case by a tampon.

FRANKENSTEIN.

**Maccabruni, F.: Relation of Syphilis to Dead, Macerated Fœtuses** (Sifilide e feti morti macerati). *Arte ostet.*, Milano, 1914, xxviii, 65.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

After a detailed discussion of the literature in regard to the effect of syphilis on the maceration of the fœtus, the author tries to determine the percentage of deaths and maceration of the fœtus due to it. In cases of pure maceration he studied the relation between the weight of the fœtus and that of the appendages in syphilitic and non-syphilitic cases. He performed 50 experiments and used the Wassermann reaction and demonstrated the spirochætes to show the presence of syphilis. In 21 cases syphilis was demonstrated. In 5 cases a probable diagnosis of syphilis was made. In 24 cases syphilis was excluded, as the history, clinical, biological, and bacteriological findings were negative. Among these 24 cases the cause of death was a soft knot in the umbilical cord in two cases, premature separation of the placenta in one, anencephalus in one, eclampsia in one, severe albuminuria in 10; and in 9 cases, 18 per cent, the cause was unknown. If the seven doubtful cases of syphilis are added to the certain ones, syphilis is the cause

of death and maceration in 52 per cent of the cases, while in 48 per cent it must be excluded as the cause of death.

During his study the author found two other factors that are of importance in the diagnosis of syphilis: syphilitic osteochondritis and an abnormal relation in weight between the spleen, liver, etc., and the total weight of the fœtus. He carried out 12 further experiments in regard to these two factors that confirmed his previous results. The weight relation between the placenta and fœtus, according to the author's experiments, was as follows: In syphilitic fœtuses during the seventh month, 1:2.75; in non-syphilitic, 1:2.25; syphilitic fœtuses in the eighth month, 1:3; in non-syphilitic 1:3.50; in all fœtuses during the ninth month, 1:4.

MESTRON.

**Unterberger, Jr., F.: A Method of Determining the Degree of Dilatation of the Os during Labor, by External Examination** (Eine Methode zur Bestimmung der Grösse des Muttermundes intra-partum durch äussere Untersuchung). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 164.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

The fact that with every pain the body of the uterus contracts firmly while the lower passive part of the uterus does not contract, gives a basis for determining, at a very early stage, the position of the contraction ring. The further the os is dilated, the more the cervix is stretched out and therefore the higher the contraction ring. When the os is dilated to the size of a five-mark piece it can be felt two finger-lengths above the symphysis; when it is three finger-breadths above it the os is dilated to the size of the palm of a small hand, and when the os is completely dilated it is four finger-breadths above the symphysis and runs transversely, not obliquely as it does in overdistention of the lower segment of the uterus. A certain degree of practice is necessary to use the method successfully, but even pupils in the midwives' schools soon learn it. The method was tested in 200 deliveries, and there were only 5 per cent of errors in diagnosis. In marked adiposity, œdema, etc., it may become difficult or even impossible to use this method. Its chief advantage is that it decreases the necessity for internal examination.

BENTHIN.

**Hoehne, O.: External Examination during Labor** (Über die Leistungsfähigkeit der äusseren Untersuchung während der Geburt). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 509.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

This is a propaganda for external examination during labor. With sufficient practice and following the signs carefully a diagnosis can be made of the presenting part and its relation to the true pelvis.

If the head is presenting, the distance of the horizontal lines of the frontal from the symphysis shows how much of the head is in the pelvis. The degree of dilatation of the os can also be determined

by external examination. The contraction ring serves as a guide here; but it can only be felt when the bladder is empty and during the pains. If labor is proceeding normally, the contraction ring will be found about four finger-breadths above the symphysis when the os is fully dilated. If the contraction ring cannot be felt, the os has not dilated to the size of a five-mark piece. Between these two conditions lie the different stages of dilatation of the os.

The contraction ring is most clearly defined in the first stage in primiparæ; it is less clearly marked in multiparæ on account of the decreased resistance of the soft parts. If the resistance is pathologically increased or there is defective progress in the delivery, the contraction ring is forced to an abnormal height with hyperdistention of the cervix. In such cases more complete information must be obtained by internal examination. In 300 labors Unterberger has determined the degree of dilatation of the os by external examination with only five per cent of failures, and the author agrees with him that the method is satisfactory.

GRAEUPNER.

**Gabaston, J. A.: A New Method of Artificial Separation of the Placenta** (Eine neue Methode künstlicher Placentalösung). *München. med. Wchn-schr.*, 1914, lxi, 651.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

In a case of complete post-partum atony with retained placenta, the author injected 2 liters of warm physiological salt solution into the umbilical vein, with the result that strong contractions of the uterus took place after 7 minutes, and after 12 minutes the placenta was delivered without any great loss of blood. The author attributes this prompt effect to the tearing off of the chorionic villi by the hyperpressure in the vessels, to the increase in the size of the placenta, and to the hydroma formed back of the placenta. He hopes by this method to avoid a manual separation in the uterus.

EHRENBERG.

**Guildal, P.: Retention of Membranes in Full-Term Delivery** (Über die Retention von Eihäuten bei der rechtzeitigen Geburt). *Ugeskr. f. Læger*, 1914, lxxvi, 457.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

The question of the importance of retention of membranes has been answered in various ways and Guildal tries to clear it up by a study of 14,078 obstetrical cases with retention of membranes in 346 cases. He concludes that treatment in the third stage has a good deal to do with the retention of membranes; active methods such as Crede's favor retention. Retention of membranes is found oftener in association with abnormalities of the placenta than when the placenta is normal.

Retention of membranes probably does not play a very importance part in post-partum hæmorrhage. The puerperal morbidity is somewhat greater in cases where the membranes are retained, but is not



decreased by removal of the membranes; this, however, can seldom be accomplished, at least manually. The membranes are discharged either in bits or altogether, the latter often between the fourth and the ninth day. It is possible that retention of membranes plays a part in the causation of endometritis.

S. A. GAMMELTOFT.

**Rachmanow, A. N.: Non-Ligation of the Umbilical Cord; Practiced in Ten Thousand Deliveries** (Methode der Nichtunterbindung der Nabelschnur. Ausgeführt bei 10,000 Geburten). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 590.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

It is physiological not to ligate the umbilical cord. In man and animals the structure of the umbilical vessels is such that when the foetus is separated from the mother by rupture or cutting of the umbilical cord its vessels do not bleed. Rachmanow has used this method in 10,000 cases from 1909-1911.

After delivery the mother should lie on her back and should not be moved. The respiration of the child and the pulsation of the umbilical vessels should be watched. After 12 to 18 minutes the umbilical vessels stop pulsating; then the cord is cut at a distance of about 4 cm. from the umbilicus. The cord is ligated only in case of very severe hæmorrhage, indicating a pathological condition.

Not one child in the series died from hæmorrhage from the non-ligated cord. Ligation was necessary in only 17 per cent of the cases, mostly in hæmophilic, syphilitic, or immature children. The method is without danger and is better for the children because the umbilicus heals better.

G. HIRSCH.

#### PUERPERIUM AND ITS COMPLICATIONS

**Porter, W. D.: Puerperal Eclampsia, with Special Reference to Prevention.** *Lancet-Clin.*, 1914, cxi, 746.

By Surg., Gynec. & Obst.

The author urges that, during pregnancy, special attention be given women who have had previous attacks of eclampsia, who have a history of nephritis, or who show an abnormal instability of the nervous system. When symptoms of eclampsia appear the author attempts to control them medically, but if the patient does not respond readily he terminates the pregnancy. He has found Norwood's tincture of veratrum viride, given hypodermatically in twenty drop doses, of value in lowering the blood-pressure and controlling the convulsions.

C. H. DAVIS.

**Baughman, G.: Puerperal Sepsis; Some Methods of Prevention.** *Virg. M. Semi-Month.*, 1914, xix, 110.

By Surg., Gynec. & Obst.

The author quotes some interesting statistics showing the great decrease in the prevalence of puerperal sepsis, during the past half century. The great ravages of puerperal sepsis began to decrease after the establishment of hospitals in the eighteenth century. In 1843, Oliver Wendell Holmes wrote on

the "Contagiousness of Puerperal Fever," and in 1847, Semmelweiss published, "The Observations by Helva."

Zangemeister and König have proved that a self infection does take place in a small number of cases. Zangemeister reported 100 cases in which an extragenital cause could not be found. He found streptococci as a primary infecting agent in sixty-seven per cent; staphylococci, 14 per cent; bacillus coli communis, 2 per cent; pneumococcus 2 per cent; unknown, 14 per cent. However, the author believes that the source of infection is more often extragenital.

The author does not believe that an internal examination is necessary except when some operative procedure must be undertaken, or when it is absolutely impossible to make a diagnosis by external manipulation. When the presenting part is in the mid or inferior strait it can be felt by pushing with the gloved hand upon the side of the vulva, or inserting a finger in the rectum. With proper aseptic care on the part of the obstetrician, puerperal sepsis will be almost a thing of the past.

C. H. DAVIS.

**Hirst, J. C.: The Routine Treatment of Puerperal Sepsis.** *J. Am. M. Ass.*, 1914, lxii, 1873.

By Surg., Gynec. & Obst.

The preventive treatment of sepsis may be summed up in two words: surgical cleanliness. The nearer the obstetric case is handled like a major surgical one, the less will be the danger of infection.

The sterilization of sheets, gauze, towels, and cotton is often a matter of some difficulty. If access to a hospital sterilizer can be had, steam under pressure in an autoclave is the most efficient method. The time-honored custom of baking in the kitchen oven is a delusion and a snare. Unless the materials are so charred as practically to disintegrate them, they are not sterile. The gauze and cotton commercially prepared in glass jars have always proved satisfactory—those in the cardboard cartons are open to suspicion.

The physician should wash his hands just as carefully as if about to operate, and in addition should wear a sterile suit, or at least a gown, and boiled rubber gloves.

The first step in the curative treatment of septi-cæmia is the local disinfection of the genital canal, commonly but erroneously spoken of as curettage—an operation more abused than any single one in obstetrics. It is indicated in nearly every case and, properly done, is productive of much good—improperly done, it may be homicidal.

No anæsthesia is necessary. The patient is placed on a table, and the vulva and vagina are carefully cleansed with cotton, tincture of green soap and sterile water, followed by a douche of 1:4,000 mercuric chloride solution. The anterior lip of the cervix is caught by a double tenaculum and pulled down; there the uterine cavity is irrigated through a two-way catheter; an Emmett curettement forceps is inserted and any masses of tissue contained in

the cavity or hanging like stalactites from its walls are removed. If any curetting at all is done, a dull, broad-bladed curette, and not a sharp one, should be used, and under no circumstances should any force be employed. In the large majority of cases, complete evacuation can be secured by the placental forceps alone, and any curetting is unnecessary. The proper type of placental forceps is much more effective than the finger and should be used in preference. When the operator is satisfied that the cavity is empty, a second intra-uterine douche is given, and the uterine cavity is not packed unless there is sufficient bleeding to warrant it.

Should the temperature not subside, or having subsided, rise again, there is no need or justification for a second evacuation. Intra-uterine douching alone is advisable, and the best solution for this douche is one of tincture of iodine, 2 drams; 95 per cent alcohol, 8 ounces; and sterile water sufficient to make two quarts. This douche given once daily is sufficient. Nothing is gained by more frequent douching. The two-way catheter should have ample provision for return flow, to prevent any fluid passing out through the fallopian tubes.

To this form of treatment there is only one contra-indication — phlebitis; but as it is impossible to know in the early stages that the pelvic veins are infected and to be sure that the uterine cavity is empty, the lesser of two risks is taken by proceeding with the disinfection. However, should a sharp rise of temperature follow the disinfectant, no further local treatment, not even an intra-uterine douche, should be countenanced. The routine use of vaginal or uterine douches in the absence of symptoms justifying their use, and purely as preventives of infection, is not to be recommended. The douches destroy Döderlein's bacilli normally present in the vagina, and thus remove one of the dependable barriers to infection.

An easily digested, largely liquid diet should be employed and alcohol should be given to the point of tolerance — from 8 to 10 ounces of whiskey a day not being an unusual dose. If the patient's pulse passes 110, digitalis and strychnine should be used.

When antistreptococcic serum is given early and in sufficient doses, beneficial and sometimes brilliant results may be expected. When given late the results are disappointing. The minimum dose is 80 ccm. given hypodermatically, every six hours—100 ccm. is better. The small doses of 10 and 20 ccm. are a waste of time and material. In desperate cases the serum may be given intravenously. No resulting anaphylaxis has been seen by the author. The injection of 7 to 8 ccm. of normal serum has occasionally given very good results, especially when made in conjunction with the injection of the antistreptococcic serum. The vaccines have not been so successful and their use is indicated chiefly in localized infections.

The conditions necessary for abdominal section in puerperal sepsis are, briefly, as follows: Continued septic symptoms, plus the development of an

abdominal mass, palpable above the symphysis or Poupart's ligament. Infiltration of the bases of the broad ligament does not require abdominal section, as 90 per cent of these cases undergo spontaneous resolution, and the rest can be opened, if needed, through the pouch of Douglas. Without operation in the former cases, the abscess will rupture through the peritoneum into the abdominal cavity, while with operation and proper drainage — which is the main factor in success — 90 per cent of them can be saved. In 165 operative cases the author had a mortality of 0.6 per cent.

Rapidity of operation, removal of only that which is diseased, putting in only enough ligatures to stop bleeding, leaving the broad ligaments agape, drainage by a glass tube in the pouch of Douglas out through the lower end of the abdominal incision, with the pelvis packed full of gauze and the end of the gauze emerging alongside the glass tube, and active stimulation are the factors influencing success. The glass tube is aspirated every twenty-four hours and removed in five days. The gauze is slowly removed during the next five days, and the sinus is then drained by a rubber tube. Vaginal drainage is useless in these cases and will reverse the mortality figures.

The treatment of phlegmasia alba dolens, one of the most frequent complications of the puerperium, consists in elevation, application of equal parts of lead-water and alcohol, painting ichthyol over the course of the vein, or the application of a saturated solution of magnesium sulphate, and the patient must be kept quiet, in bed, until the temperature has been normal for at least 10 days. The danger of embolism is greatly increased by too early activity or by massage, which should never be used. The patient should also remain inactive some time after getting out of bed.

EDWARD L. CORNELL.

**Chamtaloup, S. T.: The Prophylactic Use of Sensitized Bacterial Vaccine in Puerperal Sepsis.** *Brit. M. J.*, 1914, 1, 1221.

By Surg., Gynec. & Obst.

The author reviews briefly the reports of various writers on the bacterial flora of the female genital canal during pregnancy. Since early in 1913 he has investigated fourteen cases. In twelve of these cases, streptococci were found in intra-uterine swabs or blood-cultures, in two cases associated with the staphylococcus aureus, and in one with the bacillus coli. In two cases only was the streptococcus not found. He describes briefly the method of using intra-uterine swabs first devised by Foulerton and Bonney, the preparation of the vaccine, etc. After giving his results in fourteen cases treated with sensitized streptococcal vaccine, he makes the following suggestions:

1. In view of the fact that the health department already issues antityphoid vaccine to hospitals and the profession, through one of its laboratories, and that diphtheria antitoxin is supplied free for indigent patients, the department should issue



sensitized streptococcal vaccine for prophylactic use in maternity practice.

2. The use of a sensitized polyvalent streptococcal vaccine as a prophylactic is advised in the event of an epidemic of puerperal infection.

3. That doses of 100, 250, and 500 millions of this vaccine be given the expectant mother, at forty-eight hour intervals, ten to fourteen days before the expected date of confinement.

The author uses dead bacteria in preparing his vaccines.

C. H. DAVIS.

**Gellhorn, G.: The Management of the Puerperium; a Chapter in Preventive Medicine.** *Lancet-Clin.*, 1914, cxi, 722. By Surg., Gynec. & Obst.

The author discusses the dangers of the puerperium. He criticizes the tendency on the part of some German obstetricians to get their patients up shortly after confinement. These women need rest, the length of which should vary according to the needs of the individual cases, but should hardly ever be less than two weeks. Olshausen has stated that 90 per cent of all acquired retroflexions of the uterus originate in the first puerperium. And the author believes that retroflexion of acquired origin constitutes so profound a disturbance in the architecture of the pelvis that, sooner or later, subjective and objective symptoms will occur in all cases.

The failure of medical men to agree on a higher standard of obstetrical service and a higher remuneration, the author thinks, has helped to confirm in the minds of the public the belief that parturition is a more or less negligible condition. As a result, our hospitals are filled with women, and most of the operations are done to correct disorders which, in their last analysis, are due to failures of obstetrics.

C. H. DAVIS.

**Fabre and Dujol: Influence of Gonorrhœa on the Puerperium** (Influence de la gonococcie sur le puerperium immediat). *Bull. Soc. d'obst. et de gynec.*, 1914, iii, 200. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author believes the harmfulness of gonorrhœa is exaggerated. Every disease of the puerperium that occurs in a suspected gonorrhœa case cannot be attributed to gonococci; often streptococci are the cause. The severe cases may be recognized by (1) purulent lochia in which gonococci are found; (2) delayed involution of the uterus; (3) irregular and generally moderate fever; (4) a quickened pulse and very good general condition. Severe consequences only follow when the woman has had a fresh and severe gonorrhœal infection shortly before delivery, or when there are injuries of the parametrium.

Among 600 pregnant women the author found a suspicion of gonorrhœa in 31, in 22 of whom gonorrhœa could be demonstrated clinically and bacteriologically. Ten of them had no rise of temperature during the puerperium. Of nine women who showed only the clinical signs of gonorrhœa,

two had fever. Complications due to gonorrhœa, therefore, occurred in only 5 per cent of his patients during the puerperium, as contrasted with 25 per cent given by other authors.

JAEGER.

## MISCELLANEOUS

**Schottlaender, J.: Theory of Abderhalden's Pregnancy Reaction, and Remarks on the Internal Secretion of the Female Genitalia; Consideration of Morphological Principles** (Zur Theorie der Abderhaldenschen Schwangerschaftsreaktion, sowie Anmerkungen über die innere Sekretion des weiblichen Genitales. Erwägungen auf morphologischer Grundlage). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 425.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author discusses the question of whether new points of view may not be discovered with respect to the source of the protective ferments in the pregnancy reaction, as paradoxical reactions in some cases of tumors of the adnexa, carcinoma, and myoma cannot be explained in the usual way. He believes that the decidua is involved, either alone or to a considerable extent. Behne has shown that in pregnant cows the maternal and foetal parts of the placenta are catabolized separately, and Deutsch and Kohler found catabolism of the decidua in five cases in human beings; in this the deportation of villi does not play a very important part. The direct contact of the foetal epithelium with the maternal vessels disappears early in pregnancy. The materials originating in it reach the maternal blood via the decidua.

As the chorionic villi normally disappear soon after delivery and as protective ferments can be demonstrated 14 to 21 days after delivery, decidual elements may be active. It remains to be shown by systematic research whether the ferment reaction persists longer after abortions, and whether it is particularly strong in cases of hydatidiform mole and chorio-epithelioma. The intermenstrual period is analogous to pregnancy. The theca lutein cells in the ovaries are especially well developed at this time. Decidua cells appear outside the uterus, in inflammatory conditions, during the antemenstrual period. The fact that theca lutein cells, like decidua cells, always seem to appear when the epithelial cells of the corpus luteum seem to have exceeded the maximum of secretion, and the fact that decidua cells are found in inflamed ovarian cysts, seem to indicate that the two kinds of cells have a close mutual connection. The decidua, not the pregnancy, is responsible for the persistence of the corpus luteum. In patients with amenorrhœa the development of an antemenstrual status must be considered. The fact that a positive pregnancy reaction was found in patients with amenorrhœa is perhaps to be explained by the fact that, when there was hyperfunction of the ovaries, an antemenstrual status was brought about; but in patients with hypofunction, it was probably explained by the

presence of theca lutein cells. The further consequence of this would be that sometimes there would be catabolism of the placenta in girls, just before puberty.

BENTHIN.

**Zweifel, Herff, Hofmeier, and Others: Significance of Abderhalden's Reaction in Obstetrics and Gynecology** (Umfrage über die Bedeutung der Abderhaldenschen Untersuchungsmethoden für die Geburtshilfe und Gynäkologie). *Med. Klin.*, Berl., 1914, x, 453.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A series of questions was sent out with a view of getting an idea of the importance of Abderhalden's method in obstetrics and gynecology. The questions were: (1) What results have you obtained in your clinic with Abderhalden's method? (2) Is the method practical? (3) From your experience what is the general value of research in the direction inaugurated by Abderhalden?

Fifteen university clinics answered the questions in detail and gave the number of cases they had examined. Twelve reported excellent results, among them Zweifel's, Herff's, Hofmeier's, and Kroener's clinics. Bumm's, Stoeckel's, and Menge's had less favorable results. The majority of the investigators agreed that the method which gives its best results only in skillful and experienced hands is of great practical value and even indispensable in differential diagnosis. Some of the individual cases demonstrate this; for instance, one from Winter's clinic, where it was necessary to make a differential diagnosis between ectopic pregnancy and inflammatory disease of the adnexa. Abderhalden's reaction was negative and operation confirmed this result. A similar case is reported from Zange-meister's clinic, where it was necessary to make a differential diagnosis between tubal pregnancy and tumor of the adnexa. Abderhalden's reaction was negative twice and operation showed a tumor of the adnexa. All were agreed in answer to the last question that the research opened up by Abderhalden offers the most unusual prospects.

WILDERMUTH.

**Krupski, A. I.: The Clinical Value of the Abderhalden Reaction** (Der klinische Wert der Abderhaldenschen Reaktion). *Russk. Vrach*, 1914, xiii, 413.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author has used the Abderhalden reaction in over 100 cases; among those examined were normal and eclamptic pregnant women, women during the puerperium and after abortion, and non-pregnant women. It was also used in 10 cases of cancer. The results cannot be given in detail. The author finds that the reaction is positive in different classes of cases; for instance, in pregnancy and malignant tumors. He also finds that it is always positive in pregnancy, even at a very early stage. He thinks this fact is of great importance, for the diagnosis of pregnancy in the first

weeks or even months is often very difficult. Moreover, the reaction remains positive for two weeks after delivery or abortion. This has practical value in clinical work and in legal medicine. The author believes that this is the extent of the value of the reaction for the present.

VON HOLST.

**Esbensen, K. A.: Use of Extract of Hypophysis in Obstetrics** (Der Hypophysenextrakt in der Geburtshilfe). *Ugeskr. f. Læger*, 1914, lxxvi, 635.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Esbensen has collected 166 cases in which extract of hypophysis was used, pituitrin being used in some of the cases and pituglandol in others. He prefers pituitrin. From his examination of the material he comes to the following conclusions:

1. Extract of hypophysis produces or strengthens the contractions in most cases. The contractions appear rhythmically with pauses between them.

2. It cannot be assumed that the contractions caused by extract of hypophysis are not similar to the physiological ones because the pressure rises in the pauses between the pains; this occurs in the ordinary pains when they become stronger.

3. Abortion cannot be caused by it.

4. It has the same effect in premature as in normal delivery if labor is in progress.

5. In full term delivery it acts best during the second stage.

6. Good contractions are not made better by extract of hypophysis, but neither are they made tetanic.

7. The remedy has a regulating effect on painful contractions that are not producing any effect.

8. It seems to prevent rise of temperature, at least to any considerable degree.

9. It did not cause post-partum atony in any case.

10. It is not dangerous for the child.

11. Heart disease is not a contra-indication to its use; neither is albuminuria nor slight nephritis.

12. It should not be used in threatened eclampsia.

S. A. GAMMELTOFT.

**Bertoloni, G.: Use of Extract of Hypophysis in Obstetrics** (L'opoterapia ipofisaria in ostetricia). *Fol. gynec.*, 1914, ix, 147.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

After a discussion of the literature the author reports his own results in 43 cases. He used extract of hypophysis made by different firms in cases of abortion, premature delivery, contracted pelvis, placenta prævia, atony in the first and second stages, post-partum atony, as a prophylactic in overdistention of the uterus, and in intrapartum hæmorrhage. He had different complications, such as spasm of the cervix, dangerous tetanic contractions, once even fatal asphyxia of the foetus and severe hæmorrhage in the third stage; in other cases the remedy failed or the results were so unsatisfactory that operative measures could not be avoided. In cases of atony, and sometimes in other cases also, there was a good



effect, and in one case the use of forceps was avoided. He has no great enthusiasm for the remedy and thinks that as it is rather dangerous it should not be placed in the hands of inexperienced practitioners and midwives.

A. FUCHS.

**Oertel, C.: Laudanon in Obstetrics** (Laudanon in der Geburtshilfe). *München. med. Wchnschr.*, 1914, lxi, 604.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Most of the alkaloids contained in opium are not necessary to produce the full effect of opium; they are unnecessary ballast. Some of them, however, are very useful. Thebaine, for example, inhibits the paralyzing effect on the respiratory center, stimulates it, in fact, and decreases the irritability of the vomiting center.

Laudanon I, an opium preparation tested by Faust, contains 6 opium alkaloids, morphine, narcotine, codeine, papaverine, thebaine, and narceine. Laudanon II, which has about the same effect, has the same constituents but contains less narcotine, papaverine, and narceine.

The author tested Laudanon on 45 women and in 43 found that the pain was markedly decreased, and especially so in a case of septic meteorism. In 32 of 33 women the second stage and the delivery was rendered less painful, in some cases free from pain. But in two cases, which had been given pituglandol shortly before for atony, the contractions stopped again completely. Almost all the children cried immediately after delivery; in only one case artificial respiration had to be carried on for 15 minutes on account of paralysis of the respiratory center.

No unpleasant by- or after-effects were observed in the mothers, in spite of the fact that some of them were given as much as 6 ccm. of laudanon. One ccm. of laudanon was given intramuscularly, the first effect becoming perceptible after ten minutes; it was complete after 30 minutes and lasted two hours, when, if necessary, another ccm. was injected. Women who had not been given laudanon before were given 2 ccm. at once one-half hour before delivery was expected.

Laudanon has proved of value in eclampsia also; 1 to 2 ccm. quieted the mothers so that delivery could be completed without injury to mother or child.

EHRENBERG.

**Acconci, G.: Pathological Anatomy of the Placenta; II. Albuminuria** (Ricerche sull'anatomia patologica della placenta. Nota 2. Albuminuria). *Fol. gynec.*, 1914, ix, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author has demonstrated changes in the placenta in eclampsia and in pregnant women with albuminuria; he regards these as the anatomical substratum of these auto-intoxications. In women with chronic nephritis showing an acute exacerbation there are generally changes in the vessels, while in the toxicoes of pregnancy there is intense, atypical

proliferation of the syncytium, which penetrates the villi themselves and leads to deformity and nodulation of the villi; in other cases conglomerations of villi are formed that lead to stasis and disturbances of circulation in the subdecidua by degeneration and proliferation, fibrin formation and stratification, and, in conjunction with separation and destruction of the syncytium, cause the formation of nodules in the placenta. The destruction of placental tissue and the passage of these placental substances into the blood causes the well-known symptoms of intoxication; changes in the blood, the vessels, the liver, and the kidneys. Renewed and stronger hæmorrhages are caused in the placenta and basal decidua by the hypertension of the arteries and the increased blood-pressure.

WEISHAUPF.

**Lampe, Arno, E., and Fuchs, R.: The Action of the Blood Serum of Normal and Diseased Individuals on Placental Albumin** (Über das Verhalten des Blutserums Gesunder und Kranker gegenüber Placentäeiweiss). *Deutsche med. Wchnschr.*, 1914, xl, 747.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In contrast with the findings of Michaelis and Lagermarck the experiments of the authors with sera of different origin, from pregnant and non-pregnant, male and female individuals, shows that placental albumin is catabolized only by the serum of pregnant women and that this reaction is therefore strongly specific as held by Abderhalden. In thousands of non-pregnant cases no ferment was ever demonstrated that acted on placental albumin. One or two rare exceptions to this rule do not justify the conclusion that the protective ferments are not specific, but should only stimulate an interest in further ferment studies.

BAB.

**Zweifel, E.: Experiments in Influencing the Bacterial Content of the Vagina in Pregnancy by Medicinal Irrigations** (Versuche zur Beeinflussung des Bakteriengehaltes der Scheide Schwangerer durch medikamentöse Spülungen). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 459.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author experimented as to the possibility of influencing the quality of the vaginal flora by irrigation with different disinfecting solutions. He describes the technique of his experiments. There was a decrease in the bacteria, which did not last very long, by irrigations with solutions of oxycyanate, bichloride lysoform, and potassium permanganate. The number of cocci was decreased, and the resistance of the vaginal bacilli to the irrigating solutions increased; after a time the cocci reappeared as before. After three days' lysoform irrigation the number of vaginal bacteria was about the same as at the beginning. With a 2 per cent silver nitrate solution there was a marked decrease in the cocci.

Painting the vagina with iodine solution and the application of alcohol tampons caused a de-

crease in the bacteria, but the number of cases was too small to draw definite conclusions. Directly unfavorable results were obtained by irrigations with distilled water, boric acid, and aluminum acetate; there was an increase in the bacterial content and the proportion of cocci to bacilli was increased; that is, there was a relative increase in the pathogenic bacteria. With the bolus treatment, there was a disappearance of the discharge during the treatment; the bacteriological results were unsatisfactory.

There were good results from a ten-day irrigation with a one-half per cent lactic acid solution. Irrigations with bichloride, oxycyanate, potassium permanganate, and silver nitrate solutions are to be recommended for pregnant women who have a pathological secretion shortly before or during delivery. There should first be a mechanical cleansing of the vagina from bacteria with 1 to 2 liters of salt solution, then irrigation with 100 to 200 ccm. of 1:2000 bichloride solution. This should be used only when bacteriological examination has shown a pathological secretion. The question still remains open whether only cases with streptococcus pyogenes should be irrigated, or whether those with staphylococci or other species of bacteria should also be irrigated. In normal patients with normal secretion these medicinal irrigations are entirely superfluous; they are certainly not necessary and may even be harmful; even lactic acid irrigations can be dispensed with.

MORALLER.

**Wallich, V. and Abrami, P.: Changes in the Blood in Anæmia from Obstetrical Hæmorrhages** (Des modifications du sang dans les anémies par hémorragies obstétricales). *Ann. de gynéc. et d'obst.*, Par., 1914, xli, 72.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Two forms are to be distinguished: (1) Hæmorrhages setting in suddenly and violently; (2) those setting in gradually and lasting for a long time. The authors endeavored to determine certain indications for treatment. Increase in the rapidity of the pulse is a useful measure of the strength and dangerousness of the anæmia and runs parallel to changes in its degree — blood-pressure is of less significance in this direction.

By animal experimentation, the authors studied the reparative strength of the body and the changes in the blood-picture connected with it, and came to the following conclusions: (1) Blood-pressure is of no value in prognosis. (2) Increase in rapidity of the pulse is of more value, but not of decisive value without the blood-picture, which is the most important factor in prognosis. The number of erythrocytes shows the degree of loss of blood, but does not denote the degree of resistance of the body to this loss.

The authors believe that the resistance and the capacity of the body to react to loss of blood can be judged by the following symptoms: In the first grade where there is strong resistance, repair is shown

by the inequality in the diameter of erythrocytes, the presence of blood-cells containing granules, and polychromatophilia. In the second grade, there is less reaction, and in addition to the foregoing symptoms, there is poëilocytosis. In the third grade the last reserve forces of the body are called into action and nucleated red blood-cells appear.

HAUSER.

**Stolper, L.: Etiology and Diagnosis of Hyperemesis Gravidarum** (Zur Ätiologie und Diagnose der Hyperemesis gravidarum). *Gynäk. Rundschau*, 1914, viii, 85.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Hyperemesis is a toxicosis caused by cells originating from the periphery of the ovum and circulating in the blood. Hyperemesis is distinguished from normal pregnancy by the fact that the disintoxicating mechanism of the body is affected, or, more rarely, that there is an increase in the amount of cell toxins circulating in the blood. The mechanism of disintoxication is, to be sure, not thoroughly understood, but the liver, the corpus luteum, later the interstitial glands, and the placenta take part in it.

The author believes that the hormones of the above-named glands with internal secretion, and perhaps others also, act through the liver as a center, so that hyperemesis is not an expression of insufficiency of the liver, but of the organs which affect disintoxication, especially many of the glands with internal secretion. In diagnosis he thinks the determination of disturbance of sugar assimilation is important. It is a symptom which is to be attributed to the toxæmia of pregnancy, caused either by the deficiency in ovarian function, especially that of the corpus luteum, by a hypersensitiveness of the kidneys to sugar in the blood, or even by inanition.

HARM.

**Lutz, W.: General Dropsy of the New-Born** (Zur Lehre der allgemeinen Wassersucht des Neugeborenen). *Cor.-Bl. f. Schweiz. Ärzte*, 1914, xlv, 330.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author describes a case of general foetal dropsy. The mother had albumin and marked œdema. The Wassermann test was negative in both mother and child. The placenta was very large. Autopsy and histological findings are given in detail. The author attributes this case to blood disease in the foetus with general hydrops. The blood-picture is very similar to, but not identical with, that of myeloid leukæmia, and the abundance of nucleated red cells is probably to be regarded as a special type of reaction of the blood-forming organs of the foetus. The œdema was probably caused by hypertrophy of the heart, and to some extent also by injury to the capillary walls as a result of the extreme changes in the blood. The two factors together, hypertrophy of the heart and injury to the vessels, would explain the œdema. But cases of œdema without blood alterations show that there must be other factors in



the genesis of œdema. The author distinguishes two groups of œdema in the new-born: those with and those without changes in the blood. Possibly the same hypothetical toxin causes both groups.

EISENBACH.

**Fuchs: Resuscitation of the New-Born by Werth's Handkerchief Movement** (Zur Wiederbelebung Neugeborener mittels des Werthschen Schnupftuchmanövers). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 567.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

With the child held in a hanging position by the thighs with the right hand, while the left hand supports the neck, the knees are brought up to the left cheek by strong compression of the abdomen and thorax, and wiped forcibly over the mouth and nostrils in the manner of a handkerchief. This causes a very strong expiration and the discharge of the mucous in the upper air passages. Then the child is laid down horizontally and the spinal column hyperextended, which causes inspiration; but the results of this method are not so good, so that it is best suited to cases of mild asphyxia, in which the aspiration of mucous is the chief factor.

RUHEMANN.

**Geipel: A Case of Total Anuria** (Ein Fall von totaler Anurie). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 517.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A 32-year-old III-para had premature separation of the placenta, and a 7-months' foetus was delivered after dilatation with Bossi's dilators. After the delivery there was absolute anuria which caused death after four and one-half days; toward the end there were symptoms of uræmia and albuminuric retinitis. Autopsy showed extensive necrosis of the cortex of both kidneys. A detailed description of the microscopic findings is given. The interlobular arteries showed extensive thrombi a little distance from the necrosis, and the beginning of the thrombi was central. Though there were no other symptoms of it, eclampsia must have been the cause of the condition.

RUHEMANN.

**Geipel: Presence of Decidual Tissue in the Lymph-Glands** (Ein Beitrag zum Vorkommen des decidualen Gewebes in den Lymphdrüsen). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 521.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The first observation of this kind was made in a patient with severe anæmia who died in the second half of pregnancy. In addition to extensive decidual proliferation in Douglas' pouch and the lower third of the omentum, decidual proliferation was found for the first time in the pelvic lymph-glands. The cortical sinus was chiefly involved; in the more extensive proliferations which involved one-fourth of the gland the decidual tissue extended toward the center between the follicles and compressed them. There was no connection with the peritoneum. In the systematic examination of two other cases only

one gland was found in one of them that showed a focus of decidual transformation. This proliferation represents a specific reaction of pregnancy.

RUHEMANN.

**Tuma, J.: Use of Momburg's Elastic Constriction and Gauss' Compressor in Obstetrics** (Über Anwendung der elastischen Konstriktion nach Momburg und des Gausschen Kompressoriums in der Geburtshilfe). *Čas. lék. česk.*, 1914, liii, 289.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author first gives a historical review of the compression of the abdominal aorta in obstetrics and the physiological and clinical experiments performed along this line. Results from 50 cases from Rubeska's obstetrical clinic show that in 92 per cent of the cases the hæmorrhage was completely stopped. Objectively there was a marked alteration in the pulse in five cases; no unfavorable or injurious effect was observed either in the organs subjected to the direct pressure of the elastic tube or in other more distant ones. There were no late effects during the puerperium.

Subjectively the constriction was well borne in most cases; in five cases it had to be discontinued because the patients found it unbearable. There were two cases of death among the 50 cases; once because compression was applied too late and the other occurred suddenly six hours after delivery—in this case autopsy did not show any connection between the constriction and the death.

Gauss' compressor was used successfully in ten cases. There were no objective or subjective symptoms following it. There was one death from streptococcic sepsis. Momburg's compression can be used in suitable cases and with certain precautions in private practice, and both methods can be used with good results in the hospital. PRUŠKA.

**Jijin, F.: Air Embolus in Obstetrics** (Die Luftembolie in der Geburtshilfe). *J. akush. i. jensk. boliez.*, St. Petersburg., 1914, xxix, 341.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

His experimental study of air embolism caused the author to undertake a critical review of the cases published in obstetrical literature. He recognized only three cases as authentic: one each of Olshausen, Swinbourne, and Litzmann.

The remaining cases were only probable diagnoses or they must be rejected because either the clinical or the pathological anatomical evidences of air embolism were not sufficient; this is true of most of Olshausen's cases. The danger of obstetrical air embolism is very much exaggerated, and the textbook figures as to its frequency should be corrected.

Only an autopsy undertaken with the necessary care, with complete macroscopical and microscopical examination of the organs, should be regarded as sufficient evidence for a diagnosis of air embolism.

HEIN.

**Knoop, Gummert, and Bach: Dangers of the Use of Intra-Uterine Methods of Preventing Conception** (Über die Gefahren der intrauterin angewendeten antikonzeptionellen Mittel). *Monatsschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 406.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

According to Knoop, the decline in the birth-rate is not caused by a decrease in marriages, a decrease in fertility, or an increase in venereal diseases, but by a voluntary limitation of the number of children. It is caused, to a slight degree, by continence in marriage, but, chiefly, by measures taken to prevent conception, or by abortion. Women generally use vaginal or intra-uterine appliances for preventing conception. In the vagina they use sponges, and occlusion pessaries of rubber, gold, and silver. All these things when used for a long time cause stasis of the uterine secretion, irritation of the vagina, and vaginal and uterine catarrh. Much more harmful, however, are probes and intra-uterine syringes.

The syringe is extensively used in Germany for the purpose of producing abortion. If the fluid, generally soapsuds, a solution of acetic acid or lysol,

is injected at too high pressure, it penetrates the abdominal cavity and causes mild or severe disease; it may cause perforation of the uterus, Douglas's pouch, and the bladder.

Intra-uterine pessaries were formerly used, therapeutically, to correct malpositions of the uterus, but later they were recognized as dangerous and replaced by external pessaries. In the most favorable cases the intra-uterine pessary causes catarrh of the uterus, and, in some cases, it has caused hæmorrhage, simple and purulent discharges, parametritis, perimetritis, pyosalpingitis, perforation of the uterus, and death. The sale, use, and manufacture of the so-called maternal syringes should be forbidden; the probe should not be displayed in show windows, advertised, or sold to the laity.

GUMMERT says more women lose their lives to-day as the result of the use of probes and syringes to prevent conception and produce abortion than ever died from labor.

BACH discusses the medicolegal questions involved in the sale, advertisement, and use of means of preventing conception and producing abortion under the German laws.

EHRENBERG.



# GENITO-URINARY SURGERY

## KIDNEY AND URETER

**Souchon, E.: The Philosophic Anatomy of the Kidneys.** *N. Orl. M. & S. J.*, 1914, lxvi, 883.  
By Surg., Gynec. & Obst.

The author describes the anatomy of the kidneys in a very entertaining manner, laying special stress on the fact that the kidney is very loosely situated but still fixed, also that the kidney, like the brain, throbs when held in the hand. One of the unique anatomic facts is the presence of the adipose capsule, the purpose of which is protection. The histologic arrangement of the kidney is lucidly described and the relation of the anatomy of the organ to its physiology is thoroughly brought out.

V. D. LESPINASSE.

**Davis, L.: Calculous Anuria, with Report of Two Cases.** *Surg., Gynec. & Obst.*, 1914, xviii, 676.  
By Surg., Gynec. & Obst.

Two cases of successful operation for calculous anuria are reported.

In one case of sixty hours' duration, nephrotomy was done, with spontaneous passage of stones later. This was a case of solitary kidney. In the other case there was anuria of six days' duration. A kidney completely destroyed by tuberculosis was removed on the right side, and, at the same sitting, a nephrotomy was performed on the left, for obstruction of the renal outlet by stone.

In a critical analysis of calculous anuria, recorded in the literature, the view is expressed that the few cases cited as examples of reflex inhibition of an unobstructed but more or less diseased kidney as a result of calculous obstruction of its fellow, are to be explained, more correctly, as the functional failure of an unsound organ. Convincing post-mortem, histological, experimental, and even clinical evidence of reflex inhibition of a sound kidney as a result of calculous obstruction of its fellow is lacking.

Calculous anuria should be considered and treated as a purely mechanical problem. Pyelotomy when practicable is to be preferred to nephrotomy. The removal of the stone is an ideal to be attained whenever possible. Bilateral operation is indicated whenever the kidney first cut down upon is inadequate by itself to sustain the work of elimination of the body. It naturally follows that the bilateral operation should be performed whenever the kidney first cut down upon is apparently unobstructed.

**Boland, F. K.: Injuries of the Kidney.** *Atlanta J. Rec. Med.*, 1914, lxi, 97. By Surg., Gynec. & Obst.

This paper is practically a review of the more exhaustive reports of traumas of the kidney. The

author states that in 40 per cent of subcutaneous injuries to abdominal viscera the kidney is the one affected, and that in 80 per cent of such cases hæmaturia is a prominent symptom. In 1903, Watson, of Boston, reported 660 cases, in 20 cases of which blows or falls upon the front of the abdomen are stated to have been the cause of laceration of the kidney, and, in all but two of them, this was the sole result of the accident. Blood in the urine is the most constant, and, of course, most characteristic sign — the hæmaturia, however, may be slight or absent. If only the capsule of the kidney is torn, blood will not appear, or in very severe injuries, where the ureter is torn across, it becomes clogged with blood-clots and the quantity may be small, microscopic, or entirely absent.

Sepsis is the greatest danger after hæmorrhage, having occurred in Watson's series in 68 of 486 cases. The vein was found torn in 14 of the same author's cases, and the artery once. In 4 of 660 cases only one kidney was present. This proportion will be noted to be much higher than that usually given for this anomaly. According to the statistics of European clinics, one kidney is absent in every two thousand persons.

Peritonitis is an infrequent complication. The author's quotation from Tuffier is worth repeating; namely, that this capable experimenter and surgeon has demonstrated by experimentation on animals that no urine flows from the surface of lacerated renal wounds, and that in order to have urinary extravasation under such circumstances the renal pelvis or one of the calyces must stand in communication with the renal surface through the wound. Also, the same experimenter has shown that the introduction of urine into the peritoneal cavity does not cause peritonitis, provided the introduction is made gradually, once or even repeatedly, and intervals of sufficient length are allowed between the different introductions; whereas, if the flow is continuous the contrary is the case.

Watson's figures show a mortality of 27 per cent in cases treated expectantly; 7 per cent in cases treated by operation other than nephrectomy; and 25 per cent in cases treated by nephrectomy.

IRWIN S. KOLL.

**Azara, P.: Total Gangrene of the Right Kidney, Secondary to a Perinephritic Phlegmon** (Gangrène totale du rein droit secondaire à un phlegmon périnéphrétique). *Gazz. d. osp.*, 1914, xxxv, 633.  
By Journal de Chirurgie.

A patient of 31 had had a severe burn of the neck and right arm at three years of age. She menstruated at 17, married at 26, and had three normal

pregnancies. Six months after the first delivery she began to have a swelling of the leg, the eyelids, and the upper extremities. A diagnosis of nephritis was made and a milk diet prescribed. At the end of two months there was still a little albumin.

In January, 1914, the oedema reappeared and was especially marked in the right leg, which had a cyanotic tint; there was pain in the abdomen, more severe on the right side and irradiating into the lumbodorsal region of that side. The temperature was 38.8°, pulse 100; her general state of nutrition was poor. The urine showed albumin 9 per 1,000, cylinders, red cells, and leucocytes. The abdomen was distended with gas and the abdominal veins showed supplementary vascularization. Bimanual palpation of the right flank showed a hard, resistant, smooth oval mass with indistinct boundaries. The dullness passed into the hepatic dullness. The diagnosis was chronic nephritis with right perinephritis. There were symptoms of compression of the large veins and threatened gangrene of the right lower limb. Operation was performed Feb. 4, 1914. Lumbar incision showed a mass surrounding the right kidney, the volume of which explained the stasis in the right leg. Incision was followed by perinephritic phlegmon. A tampon was used. For a few days there was a fetid discharge and, on the twelfth day, necrosis of the whole kidney was discovered. Extirpation of the organ was accomplished without hæmorrhage. The recovery was without fever, but with persistence of a small quantity of albumin. The author believes the necrosis was due to the compression of the vessels of the kidney by the perinephritis. The lower limb was also threatened with gangrene from compression of the right iliac vessels.

CH. VILLANDRE.

**Ramsey, W. R.: Infections of the Urinary Tract in Infants.** *St. Paul M. J.*, 1914, xvi, 343.

By Surg., Gynec. & Obst.

In this second report the author adds 100 cases to a series of 60 that he reported a short time ago. In ninety per cent of all cases the infection was due to the colon bacillus. Quoting Goppert, he states that one to one and one-half per cent of the infants brought to his clinic suffered from infections of the urinary tract, ten per cent being in boys, and ninety per cent in girls. He also adds a series of 20 cases of urinary infection resulting from a diplococcus resembling the pneumococcus, details of which he will report later. Most of the acute cases apparently recover completely, but are prone to relapses. Pfoufnder discovered that the blood from cases suffering from acute infection with the colon bacillus was able to produce clumping of the bacilli, just as the blood after the method of Widal produces clumping of the typhoid bacillus. The immunity, however, from one attack is very transient, since reinfections occur so promptly. Fortunately, chronic infections are much less common than the acute variety. Several of the acute cases seen five years previously, however, are not chronic. They assume

the form of a chronic bacteriuria, with more or less local irritation. Pathologically, Ricker's findings were few in comparison with the severity of the symptoms. The records from microscopic examinations of the mucous membranes were usually negative. This included the mucosa and submucosa of the pelvis, kidney, ureters, and bladder.

Reviewing the work of Hinman, the author points out the futility of the use of hexamethylenamine, particularly in those cases where the kidney is involved. In chronic cases of bacteriuria the author thinks the prognosis ultimately bad.

IRWIN S. KOLL.

**Stammler, A.: Study of Aberrant, Supernumerary Ureter** (Zur Kenntnis der aberrierenden, überzähligen Ureter). *Ztschr. f. urol. Chir.*, 1914, ii, 241.  
By Zentrabl. f. d. ges. Chir. u. i. Grenzgeb.

A 15-year-old girl had had the habit of bed-wetting. Examination showed two aberrant supernumerary ureters, which opened into the vagina just back of the introitus. After a careful functional test and a thorough examination with the cystoscope and a collargol röntgen picture, it was found that, in accordance with Weigert's rule, the ureter emptying lowest down crossed the other and led to a separate pelvis in the upper half of the kidney. The urine of the supernumerary ureters was not infected.

Kümmel operated as follows with complete recovery: The right kidney was laid bare; the supernumerary ureter was sectioned and an anastomosis formed between the separate pelvises. On the left side the supernumerary ureter was ligated off, and a part of the upper half of the corresponding kidney resected. The formation of an anastomosis was not advisable on account of the small size of the upper pelvis. The girl is now free from symptoms.

OEHLECKER.

**Rolando, S.: Intravesical Extirpation of Large Papillomata Implanted Around the Ureters** (Sur l'extirpation dans la vessie des papillomes volumineux à implantation péri-urétrale). *J. d'uro.*, 1914, v, 585.  
By Journal de Chirurgie.

When a rather large new-growth implanted around the ureters is to be removed, it is advantageous to perform catheterization of the corresponding ureter either by cystoscopy or through the opened bladder. A search for the meatus may be unsuccessful, and if so it is advisable to destroy the tumor without regard to the ureter, as experience has shown that the results are generally normal. Nevertheless, it is preferable to find the meatus of the ureter. In order to accomplish this Rolando recommends the following procedure which he has used successfully in two cases. If, after opening and resection of the bladder, the meatus is not found, the surgeon should remove the tumor after ligating it above the implantation of the pedicle. The removal may be executed with the thermo or galvanocautery, or if it has been well ligated, with the scissors.



Hæmostasis having been accomplished, the meatus of the ureter may be found without difficulty, whatever its position. The operation is then completed by removing the pedicle and safeguarding the opening of the ureter.

J. TANTON.

# BLADDER, URETHRA, AND PENIS

**Simpson, T. Y.:** A Case of Ectopia Vesicæ, in which the Ureters were Grafted Successfully into the Rectum. *Brit. M. J.*, 1914, i, 1228.

By Surg., Gynec. & Obst.

The author had as a patient, a girl aged eight years who had ectopia vesicæ; the symphysis pubis was absent, and there was a bulging of the posterior bladder wall.

After liberating the bladder, Simpson inserted a catheter into each ureter. The bladder was resected down to the trigonum, then, dividing the triangular ligament, the lower end of each ureter was turned back into the vagina in close proximity to the anterior rectal wall. Through a rectovaginal incision the catheters and ureters were inserted into the rectum, and the free edges of the rectovaginal incision sutured to the ureters. After seven days the catheters which protruded from the anus were withdrawn. The patient is now able to hold urine in the rectum for several hours. The whole procedure is based upon the principles of the Maydl operation.

HARRY KRAUS.

**Johnston, J. A.:** Exstrophy of the Bladder. *Lancet-Clin.*, 1914, cxi, 692.

By Surg., Gynec. & Obst.

The author reports the case of a woman, thirty-five years old, whose posterior bladder wall was almost flush with the skin surface. The opening was two and one-half inches in diameter, quite red, and exudated thick mucus. The urine came from the left ureter only. There was no urethra and the pubic bones were one and one-half inches apart. Two previous plastic operations having failed, the Maydl operation was performed upon the left ureter. Nothing was done with the right ureter, as no urine appeared on that side. Now, three years after the operation was performed, the patient voids urine once or twice in the night, and every one, two, or three hours during the day. Her general health is not as good as before the operation.

The author advises that a suitable apparatus made of German silver be worn by the patient in preference to operation; he also urges that the patients be immunized against colon bacilli before transplantation of the ureters.

HARRY KRAUS.

**Claybrook, E. B.:** A Simple Method of Bladder Drainage. *Old Dominion J.*, 1914, xviii, 308.

By Surg., Gynec. & Obst.

In acute retention of urine, due to stricture or hypertrophy of the prostate, and other causes, where it is impossible to press the catheter, the

author advocates the use of a good trocar, suprapubically, to avoid repetition of tapping with the usual needle instead.

As soon as the puncture into the bladder is made the stylet is withdrawn and a soft rubber catheter slipped in through the sleeve into the bladder and left in place, withdrawing the sleeve carefully over the catheter, a strip of adhesive is then given a turn around the catheter and the two free ends fastened down to the skin. The catheter is left in the bladder until the necessary treatment to remove the obstruction is carried out.

Bladder irrigations through the catheter may be carried on when indicated.

THEO. DROZDOWITZ.

**Veau, V.:** Total Rupture of the Urethra in a Child of Eleven; Circular Suture; Cystostomy; Recovery without Stricture (Rupture totale de l'urètre chez un enfant de 11 ans; suture circulaire; cystostomie; guérison sans retrecissement). *Bull. et mém. Soc. de chir. de Par.*, 1914, xl, 544.

By Journal de Chirurgie.

Veau reports the case of a young boy who fell astride the back of a chair and showed all the signs of rupture of the urethra: discharge of blood through the meatus, retention of urine with distention of the bladder, perineal ecchymosis. Operation, which was performed 16 hours after the accident, verified the diagnosis. The two ends were easily brought together and sutured circularly; the suburethral tissues were brought together and the perineal wound left open with a drain. Suprapubic cystostomy was then performed and a large No. 30 drain placed in the bladder. The results were good. The perineal wound cicatrized in ten days without supuration, the urine passing through the bladder drain. This drain was then removed and the patient urinated through the meatus from the twelfth day. A very small hypogastric fistula, occasionally discharging a few drops of urine, persisted for 16 months. Since then micturition has been entirely normal. There is no stricture.

MARION took occasion to review the late results of 9 of his own cases of repair of the ruptured urethra by the method to which his name has been given. In all of the 9 cases subsequent examination has shown that there was no stricture of the urethra. The examinations were made three to six months after the operations. In two cases there was dislocation of the urethra, so that no instrument could be introduced unless guided by a conducting bougie; but as soon as the bougie was introduced the canal was found to be of normal size. He reviews his method of repairing the ruptured urethra, which is the same as that described in the operation above.

LEGUEU confirmed what Marion had said. His method has marked a great advance in the treatment of traumatism and rupture of the urethra; there is only one contra-indication—that is when the loss of substance is so great as to prevent suture; in such cases urethral autoplasty must be performed.

J. DUMONT.

**Marion, G.: Late Results of Circular Urethrorrhaphy, Followed by Derivation in Rupture and Traumatic Stricture of the Urethra** (Résultats éloignés des uréthrorraphies circulaires, suivies de dérivation dans les ruptures et les rétrécissements traumatiques de l'urètre). *J. d'uro.*, 1914, v, 553.

By Journal de Chirurgie.

Marion reports the late results of the operation which he and Heitz-Boyer have used since 1910. They have made certain modifications in the method resulting from experience. The perineal urethrostomy for derivation of the urine has been advantageously replaced by cystostomy, which is easier, especially when the urethral lesion is near the middle aponeurosis; it never gives a fistula, and it allows of retrograde catheterization. The cystostomy is performed first before operating on the perineum, as it is easier to find the posterior end of the urethra after retrograde catheterization, which is practiced immediately.

The repair of the urethra should be preceded by discrete freshening of the contused ends of the urethra; extensive resection may prevent the sutures from holding. In case of extensive destruction of the urethra it is preferable to follow the old method of repair around a sound and secondary resection of the stricture, if one is produced. It is of primary importance to place two sutures at the anterior end, to bring this end into contact with the posterior one, so that there may be no traction on the sutures holding the two ends together. The urethra should be sutured around as large a sound as possible, but the skin of the perineal wound should not be sutured. During cicatrization neither lavage, exploration, nor dilatation should be performed.

Ten cases are reported, 9 of them the author's, examined three to six months after operation. There was no stricture following the operation in any case. The method should be used, therefore, in rupture and traumatic stricture of the urethra on account of the perfection of its results. The exceptions are in too extensive contusions of the urethra, and rupture of the membranous urethra by fracture of the pelvis—the latter occurs in strictures more rarely than in ruptures of the perineal urethra.

J. TANTON.

#### GENITAL ORGANS

**Mosti, R.: Cysts of the Spermatic Cord, of Connective-Tissue Origin** (Les kystes du cordon spermatique d'origine conjonctive). *Gazz. d. osp.*, 1914, xxxv, 569.

By Journal de Chirurgie.

A youth of 20 had received a severe injury in the left inguinoscrotal region six years previous. He had been obliged to go to bed for a week; but there was no swelling either in the scrotum or inguinal region. A few months afterward a small swelling appeared at the root of the scrotum and continued to increase in size. When examined, it was the size of a nut, irreducible, and received no impulse on coughing; it was elastic, non-fluctuating, not

painful; it was easily moved along the cord, which was posterior to it. The orifice of the inguinal canal was enlarged and the tumor could easily be inserted into it. The diagnosis was cyst of the left spermatic cord. An operation was performed under novocaine anæsthesia. The cyst, which seemed to be covered by the cremaster without any intimate relation with the elements of the cord, was easy to enucleate. Bassini's operation was followed by recovery. The cyst was smooth and the wall one-half cm. thick. The contents was clear, lemon-yellow, alkaline in reaction, very rich in albumin, and contained some red cells and a very few white cells. The wall was made up of connective tissue more compact on the internal surface. Cells were numerous in this tissue—some round, some elongated—and there was a veritable infiltration of small diffuse cells, especially abundant on the internal surface of the wall. There was no epithelial or endothelial covering.

Connective-tissue cysts of the spermatic cord are extremely rare. Slight and repeated traumatism and slight inflammation are the usual causes. Clinical diagnosis is very difficult. Histological examination shows the absence of endothelial or epithelial covering.

CH. VILLANDRE.

**Squier, J. B.: Indications for Operation on the Seminal Vesicle.** *Boston M. & S. J.*, 1914, clxx, 908.

By Surg., Gynec. & Obst.

The greater part of Squier's article consists of a discussion of the later views regarding chronic infections. He refers to the work of Adami and Rosenow, and suggests that the gonococcus either becomes metamorphosed into forms resembling other bacteria, or attracts other organisms to areas of lowered resistance. The seminal vesicle, with an anatomical arrangement which is favorable to drainage in only 4 per cent of all vesicles, is well suited for such a process of "subinfection." Squier believes that only in a small proportion of cases does the vesicle drain itself; in the majority of cases the infection becomes encapsulated by scar-tissue and offers to the blood stream a constant supply of toxins, or of bacteria of low virulence.

Through the slow but persistent action of these products upon the synovia of the joints, the heart valves, and the kidney epithelium, there develops arthritis of atrophic or hypertrophic forms, endocarditis, and nephritis.

Squier denotes pus, pain, and rheumatism as immediate indications for operation on the vesicles. In acute infections with the symptoms of what is usually called acute prostatitis, developing during an attack of gonorrhœa, in cases of relapsing epididymitis, and in cases of chronic suppuration of the vesicles, drainage is indicated. Perineal pain has been associated in three cases with vesicular calculi composed of phosphate and carbonate of lime, and Squier believes this condition will be found not infrequently. In cases of rheumatism, if the infection can be shown to be derived from the vesicles, drain-



age is indicated — it is necessary that other foci be excluded first. Squier's experience with rheumatic cases has been limited to the acute and subacute varieties, and in every case (number not given) "immediate cessation or amelioration of the joint symptoms has resulted." GEORGE G. SMITH.

**Young, H. H.: The Diagnosis and Treatment of Early Malignant Disease of the Prostate.**  
*Am. J. Urol.*, 1914, x, 251.

By Surg., Gynec. & Obst.

From his complete list of prostatic carcinomata, Young has selected twelve that might be considered early, reciting the history and critically analyzing each case as to diagnosis and radical cure.

He divides them into three classes as follows:

1. Those in which the only pathological process present is cancers — six cases.
2. Those in which cancer is associated with hypertrophy or benign adenoma — five cases.
3. A case of chronic prostatitis with a small area of cancer in it.

In the study of the symptomatology of these early cases and other late cases he concludes that there was nothing diagnostic or even suggestive; there was complete absence of hæmaturia and hence it is erroneous to expect bleeding as an early symptom.

There was nothing in the appearance of these twelve patients to suggest malignant disease; they were not emaciated, nor were they suffering pain, with the exception of four cases, and in these it was not severe.

In the first series there was roughness in three cases and nodulation in three, which are suspicious symptoms. Characteristic also was a small bar unaccompanied by marked lateral intravesical enlargement. In the second series, delicate palpation, and particularly palpation upon a cystoscope in the urethra, will often show localized areas of induration or nodulation, which is also a suspicious sign. In the third series there was also the characteristic small bar as was noted in the first series. There was no definite invasion of the seminal vesicles.

The diagnostic signs found were marked induration ("stony hardness"), either localized or diffuse, in men past 50 years of age, particularly when there was no history of a long-standing prostatitis, and even when the prostate was the seat of a chronic prostatitis, as in the third series. The absence of hæmaturia is not specially a symptom; pain, while suggestive, is also absent in early cases, though generally present and almost pathognomonic later on. The presence of benign hypertrophy of the lateral and medium lobes should not lead to error, for the elasticity of the soft adenomatous masses may often rob the posterior nodule or layer of carcinomatous tissue of its sensation of induration to the finger in the rectum, particularly on deep pressure. He says that it is only by being continually suspicious of marked induration, even if confined to a small nodule, that early diagnosis can be expected and radical cures obtained.

Young describes his method of radical cure for cancer of the prostate previously published, and, as a result of the experience gained in six cases, reaches the following conclusions:

1. The operation should not be attempted where the infiltration extends more than a short distance beneath the trigone, as determined by the cystoscopic examination with the finger in the rectum and the cystoscope in the urethra; nor where the upper portion of both seminal vesicles are involved; nor where an extensive intervesicular mass, indurated lymphatic glands, involvement of the membranous urethra or muscle of the rectum shows that the disease has manifestly progressed too far. The ureteral papillæ should be left intact with sufficient tissue below them to insure proper suture and to leave their openings free from constriction, 1 or 2 cm. above the wound.

2. Hæmorrhage should be carefully checked — by hugging the capsule, injury of the periprostatic plexus may be largely avoided.

3. Silk should never be used, and catgut only when occasional stitches of silkworm gut are employed to hold the tissue together in making the urethrovesical anastomosis.

4. When the operation is performed early it can be done without much danger or great difficulty and with excellent chance of cure.

The operation of conservative (partial) perineal prostatectomy in advanced cases of cancer of the prostate has produced wonderfully fine functional results which were in most cases maintained as long as the patients lived. Young discovered this fact accidentally, as a result of operations performed on supposedly benign prostates which proved to be malignant. Up to April, 1913, he had 52 cases with 2 deaths. During the last two years 16 cases have been operated upon with no deaths.

The author feels justified in carrying out the procedure of conservative perineal prostatectomy on almost all cases of cancer of the prostate which are too advanced for a radical operation, and in which the frequency and difficulty of urination are considerable and the use of a catheter difficult or painful.

LOUIS GROSS.

## MISCELLANEOUS

**Bertholet, E.: The Effect of Chronic Alcoholism on the Organs of Man, Especially on the Sexual Glands** (Die Wirkung des chronischen Alkoholismus auf die Organe des Menschen, insbesondere auf die Geschlechtsdrüsen). *Stuttg., Mimir. Verl.*, 1913.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Many clinical and experimental studies have shown that alcohol has a toxic effect on the organs of the body and on the sexual glands. The author tried to ascertain whether this injurious effect could be demonstrated microscopically. Therefore, he made microscopic examinations of the testicles of 163 chronic drinkers and of 100 non-drinkers. He found that the chronic alcoholics

died sooner than the abstainers, and that all the organs of the former seemed to degenerate more frequently and to a greater degree than those of the latter. The testicles were the organs most frequently involved, 86 per cent of them showing signs of degeneration. This degeneration began very early and led very quickly to complete atrophy of the testicle and to azoöspemia. Fatty degeneration was the first change to set in and it proceeded very rapidly. There was also sclerosis, with cells interspersed through the connective tissue, and progressive atrophy of the glandular parts of the seminal ducts. Unfortunately, he could not get much material for examination of the female glands, but he obtained the ovaries from ten female alcoholics. He believes that the effect of alcohol on the female glands is as great and as rapid as on the male. He did not find a single normal ovary in the cases examined. BUSCHAN.

**Allmann: External Masculine Pseudohermaphroditism** (Pseudo hermaphroditism masculinus externus). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 122.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A 22-year-old individual, who had grown up as a girl, discovered after puberty that she did not belong to the female sex. She had the feelings of a man and her photograph shows a pronounced masculine appearance. The external genitalia showed the picture of hypoplastic masculine organs with hypospadias. In a left-sided inguinal hernia and in the right inguinal canal there were small round bodies. On operation for the hernia the contents was found to be a twisted testicle and seminal cord. Microscopically, there was aplasia of the testicle with abundant interstitial cells. An interesting feature in the case was the appearance of a menstrual molimen every four weeks. Allmann believes this was caused either by periodic swelling of the testicles in the inguinal canal or by a disturbance in the internal secretion of the genital glands, which was then projected by a sort of autosuggestion into symptoms in the malformed genital organs.

FRANZ COHN.

**Walker, J. W. T.: Urinary Antiseptics.** *Edinb. M. J.*, 1914, xii, 503. By Surg., Gynec. & Obst.

The author confirms the now accepted view that urotropine is of value as an internal antiseptic only when converted into formaldehyde, and that this conversion occurs as a simple chemical reaction in an acid medium, and not by virtue of any particular cell activity on the part of the body. The only possible therapeutic application of the drug, therefore, is as a urinary antiseptic.

Walker makes some very practical and valuable observations for urotropine therapy. He says it is seldom difficult to render an acid urine alkaline, or moderately so. Potassium citrate and acetate and sodium bicarbonate are in common use and usually effective.

This alkaline treatment has been of wide use in

pyelitis or cystitis, because of a colon bacillus in which the urine has a pronounced acidity. In the pyelitis of childhood, due to the colon bacillus, it is now the settled practice to apply the alkaline treatment. The urine quickly becomes alkaline and "when this has been accomplished the symptoms subside—the temperature falls to normal, the drowsiness and mental torpor vanish, the pain ceases, and the frequent micturition and scalding disappear." The improvement observed is attributed to the inhibition or death of the bacillus coli, by the action of the alkalis. But, according to Walker, the colon bacillus will grow in a urine made many times more alkaline than can be done in the body, and there is no marked difference in the rate of growth, whether the urine be acid or alkaline. This observation is significant and leads Walker to conclude: "The action of alkalis in pyelitis appears to be a neutralization of the acid toxæmia produced by the bacillus coli. The cures that are claimed, clinically, are not cures in the bacteriological sense, for the infection remains; only the symptoms which were due to the acids or acid endotoxins have disappeared. It is true that, in some cases, when the urine is finally examined the bacteria have disappeared, but in these cases, which are the exception, the destruction may be attributed to the natural resistance of the patient and not to the alkalis."

Walker suggests the following course of treatment of acute urinary infection due to the colon bacillus: First, keep the urine alkaline by a course of alkalis until some days after the symptoms have disappeared, and then omit the alkaline treatment and give a vigorous course of urinary antiseptics (urotropine), acidifying the urine if necessary by increasing doses of acid sodium phosphate or ammonium benzoate.

The treatment of urinary infections causing an alkaline urine is not so simple. Urotropine is not converted and is ineffectual. Therapy, therefore, should be directed toward rendering these alkaline urines acid. There are two types of alkaline urine: One is a faintly alkaline urine which deposits phosphates sometimes in large amounts, but which apart from the change in reaction is normal in other respects; the other is a powerfully alkaline urine with ammoniacal decomposition, in which there is an abundant growth of bacteria (streptococcus, staphylococcus, etc.), together with other abnormal constituents, such as mucus, blood, and pus. In order to make these urines acid, Walker gives acid sodium phosphate, beginning with 20 grains three times a day, the reaction of the urine being watched and the dose increased every second day to 30, 40, 60, 90, 120, and, if necessary, to 150 grains before each meal. The decrease is limited by the effect on the bowels, as the large doses may cause diarrhœa. In the same way ammonium benzoate may be given in increasing doses of 10, 15, 20, and 30 grains. It is useless to give urotropine before the urine is acid and, until this occurs, Walker advises giving boric acid (10 to 15 grains three times a day), which he



believes has no influence in acidifying the urine but has a "distinct antiseptic influence." As soon as the urine is acid, urotropine is substituted. Urotropine should never be given with the acid-producing drugs: the former is better given after meals when the acidity of the stomach is reduced; and the latter, some time before the meal.

A popular method in the treatment of cystitis and urinary infections has long been by diuretics and forced water. This cannot be wisely used in

conjunction with urotropine therapy, as it lowers the acidity of the urine so that splitting of the urotropine does not take place. A choice of the two methods, powerful diuresis and urotropine therapy, must therefore be made.

The author emphasizes the importance of the systematic use of urinary antiseptics as prophylactic agents against urinary infection in all forms of instrumentation of the urethra and bladder and genito-urinary or pelvic operations.

FRANK HINMAN.

## SURGERY OF THE EYE AND EAR

### EYE

**Perlmann, A.: Etiological Relationship between Accident and Detachment of the Retina** (Über den ursächlichen Zusammenhang von Netzhautablösung und Unfall). *Ztschr. f. Augenh.*, Berl., 1914, xxxi, 41.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author discusses the relationship between accident and detachment of the retina. He describes the disease in such a way as to make it easily understood by the laity, so far as it is scientifically explained. He attributes detachment of the retina to various causes, general and local, and shows that there is a predisposition to this trouble.

He distinguishes a primary and a secondary form; that is, a direct one and an indirect one, from trauma or other disease. In regard to the latter he points out the marked difference between cases that result from direct injury of the eye by sharp instruments, in which the connection with the accident is not to be doubted, and those that follow other accidents, such as concussion. In the latter class of cases there is generally no connection between the accident and the affection of the retina, as such an accident would never cause detachment of the retina in a normal eye.

He discusses the question of secondary detachment of the retina in tumors and, in most cases, believes there is no connection with an accident. As to primary detachment of the retina, he points out that it always occurs as the result of other pathological conditions of the internal eye, especially nutritive disturbances of the vitreous body. He comes to the conclusion that accident is never really the cause of primary detachment of the retina, but, at most, furnishes the occasion for it.

The question of whether accident of any kind can cause detachment of the retina in an eye predisposed to it is discussed. He thinks it is relatively easy to answer the question in the affirmative in accidents characterized by suddenness and violence, but believes that there must be a critical consideration of the accident in each case and the relation in time between it and the detachment. If there is no real

accident, but only an exaggeration of the patient's usual effort in work, he does not believe there can be any causal relation. He bases his opinion on important principles and on expressions of similar opinion by Leber and Schmidt-Rimpler. The decisions of insurance companies in such cases are cited. Most of the decisions, of course, are in primary detachment. The lack of clearness and uniformity in the opinions of physicians regarding the question is shown by the decisions of the insurance companies. Decisions are quoted which contradict each other. The uncertainty is especially shown in cases where there is no real accident, but merely overexertion in work. He disagrees with some of the decisions, decidedly.

QUINT.

**Doumenge, R.: Otitis Media and Otic Septicæmia from Pyocyaneus** (Otitis moyennes et septicémies otiques à pyocyanique). *Thèses de doct.*, Par., 1914. By Journal de Chirurgie.

In otology the bacillus pyocyaneus has generally been considered the cause of spontaneous or post-operative perichondritis and of external croupous otitis. Sometimes, however, it causes more serious complications, as in the case described below:

A young man of 19 had had a discharge from the right ear from infancy. This otorrhœa became worse and there was a thrombophlebitis of the lateral sinus. In the course of the mastoid operation the operator was struck by the appearance of the bone on which the sinus rested. After a temporary improvement a second operation had to be performed on the third day. The greater part of the petrous portion of the temporal was resected, an incision of the lower part of the sinus did not cause any flow of blood and the jugular was ligated. From that time the patient improved progressively, and left the hospital at the end of three and one-half months. His convalescence was interrupted twice by pulmonary attacks and the sputum collected at this time had the characteristic appearance and odor of pyocyaneus. Hæmoculture proved that it was a case of pyocyaneus septicæmia. Cultivation in

bouillon of blood obtained at the bend of the elbow yielded colonies of typical bacillus pyocyaneus.

FRANCIS MUNCH.

**Harry, P. A. Traumatic Exfoliative Keratitis.**  
*Lancet*, Lond., 1914, clxxxvi, 1679.

By Surg., Gynec. & Obst.

Harry's six cases of traumatic exfoliative keratitis followed traumatism of a trivial nature. The symptoms are definite and clearly stated: upon awaking and opening the eye, a sharp, stabbing pain of neuralgic character is experienced; the eyeball is red, vision slightly lowered and accompanied with lachrimation and photophobia. With or without treatment the eye returns to normal in a few days. Relapses take place with more or less regularity every four to six weeks, with a slightly superficial milky spot at the site of the original injury, and, in the immediate vicinity, the epithelium is loosely attached to Bowman's membrane. The most likely explanation for this comparatively rare condition is the presence of some toxin manufactured beneath the epithelium, thereby producing small exfoliations. If curetting and cauterizing fail, the author recommends several oblique needle corneal punctures at and around the seat of trauma, to allow the aqueous antibody to escape slowly between Bowman's membrane and the epithelium. This, together with the use of weak peroxide and 2 per cent chloretone, is sufficient to prevent recurrence. FRANCIS LANE.

**Gibson, C.: Blepharoplasty by a Pregrafted Flap.**  
*Ann. Surg.*, Phila., 1914, lix, 958.

By Surg., Gynec. & Obst.

By figures the author shows the outlines of his steps for grafting. The operation is divided into two stages as follows:

1. In the first stage, the horizontal incision from the outer canthus of the eye is made a little longer than the part to be grafted. A pouch is made, pocket-like in effect, so that it will contain the cut graft and the edge of the graft overlapping the pouch. A protective dressing is then applied.

2. In the second stage, the growth from the lower eyelid is removed by a quadrangular incision impinging on the skin from which the pregrafted flap is made. This horizontal incision, which is parallel to the first original incision, frees the flap, allowing it to be slit over into the gap.

The author compares the advantages of the operation for the removal of malignant growths from lid-borders to those resulting from treatment with the X-ray, caustics, or radium. He cites two cases with no recurrences—the first for ten years, and the second for seven years. L. J. GOLDBACH.

**Baird, R.: Cataract in the Capsule; with Notes on Eleven Hundred Thirty-Seven Consecutive Operations.** *Indian M. Gaz.*, 1914, xlix, 215.

By Surg., Gynec. & Obst.

Baird sums up the advantages as well as the dangers and difficulties of the Smith operation. His

record of cases gives a clear idea of the satisfactory results obtained in this series. E. B. FOWLER.

**Newman, E. A. R.: Irrigation after Cataract.**  
*Indian M. Gaz.*, 1914, xlix, 218.

By Surg., Gynec. & Obst.

Newman describes the method of irrigation of the anterior chamber. He uses a closed-end irrigator with a slit in the side, the nozzle being placed just inside the outer angle of the wound while the normal saline solution is run through it. Of 93 cases only 3 required needling. E. B. FOWLER.

**Holland, H. T.: A Thousand Cataracts Performed in Six Weeks at Shikarpur.** *Indian M. Gaz.*, 1914, xlix, 213.

By Surg., Gynec. & Obst.

Of the 1,024 extractions on which these observations are based, 800 were performed according to Smith's method. The author resorts to capsulotomy in cases in which the lens will not present except with greater pressure than he deems safe and in cases of very high tension, believing choroidal hæmorrhage less apt to occur. He compares the methods and states that he considers the intracapsular the operation of choice. E. B. FOWLER.

**O'Connor, R. P.: Further Experience with the Writer's Method of Shortening Ocular Muscles without Employing Sutures under Tension.**  
*Arch. Ophth.*, 1914, xliii, 368.

By Surg., Gynec. & Obst.

In the shortening of ocular muscles without employing sutures under tension, O'Connor has devised a method of advancement calculated to obviate the customary overcorrection necessary to offset the subsequent slipping which invariably occurs the first few days after the customary operations. He declares the great defect of most operations is that the sutures are so placed that they are necessarily under the elastic pull of the muscle, thus violating an important principle of surgery with regard to suturing. The principal step consists in separating strips of the tendon 1 or 2 mm. broad, full length at both margins, about which catgut strands are so placed that when made taut, the strips are folded into a double loop and thereby shortened. These shortened strips bear the brunt of any muscular traction and serve to splint the sutures which hold in place the broad central section of the tendon, which has been brought forward after the manner of other methods, while firm union is taking place. Five cases operated on after this fashion resulted in all that was expected or even desired. FRANCIS LANE.

#### EAR

**Lothrop, H. A.: Frontal Sinus Suppuration.**  
*Ann. Surg.*, Phila., 1914, lix, 937.

By Surg., Gynec. & Obst.

To obtain satisfactory drainage of the frontal sinus it is necessary to bear in mind that the ostium



is surrounded by thin bone and, while the area posterior and internal is small and too dangerous for interference, the area anterior and external is comparatively thick and dense and may be removed with comparative safety. The variable relations may be determined by X-ray examination in two planes.

The technique of operation is as follows: An incision is made from the center of the unshaven eyebrow inward and downward; the sinus is entered just above the base of the nasal process; and a probe, bent so it will stay in place, is passed through the ostium and out through the anterior nares. The ostium is enlarged by passing small curettes from above down in front and external to the probe at the ostium. With the probe as a guide, burr drills are introduced through the nares and the opening enlarged with precision and safety. A large portion of the interfrontal septum is removed even though the other sinus be healthy, as the proximity of healthy mucous membrane favors early epidermization. The external wound is then washed with a sterile solution and the skin incision is closed.

ELLEN J. PATTERSON.

**Wood, J. W.: The Use of the Nasopharyngoscope in Otorhinology.** *Practitioner*, 1914, xcii, 760.  
By Surg., Gynec. & Obst.

Besides the value of the nasopharyngoscope in examining the nasopharynx and eustachian tubes, as well as the posterior choanæ and the structures contained therein, the author dwells on some of the more accurate methods of therapy, made under direct inspection, because of the aid derived from this instrument.

For instance, in tubal therapy, with the nasopharyngoscope passed through the opposite nostril, the tubal instruments are kept within the operator's gaze and directed where they should go.

Again in referring to the relief of hemicranias and facial neuralgias of nasal origin by alcohol injections of the sphenopalatine ganglion, as discovered by Sluder, the author speaks of the injection without the aid of the nasopharyngoscope, as a "shot in the dark"; but with the aid of this instrument the region is easily inspected and the injections made more accurately.

The value of the nasopharyngoscope in exploring the sphenoidal sinuses and maxillary sinuses is also mentioned.

OTTO M. ROTT.

**Welty, C. F.: Indication for the Labyrinth Operation, with Report of Eight Operations and Six Cases in which no Operation was Performed.** *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxiii, 66.  
By Surg., Gynec. & Obst.

The author reports several cases operated upon for chronic suppurative otitis media which later developed labyrinthine affections or cerebral symptoms, some of which were operated upon and some of which recovered without operation.

However, the author thinks that in cases of sup-

purative otitis media, infection by way of the labyrinth is a frequent cause of infection of the meninges, and he considers the labyrinth operation indicated in those cases which have only remnants of hearing on the one side and no caloric reaction, or *vice versa*. It is his opinion that in the near future it will be considered conservative surgery in these cases to open and explore.

ELLEN J. PATTERSON.

**Sharp, J. C.: When the Radical Mastoid is Imperative.** *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxiii, 74.  
By Surg., Gynec. & Obst.

The indications for radical mastoid operation are cholesteatoma, caries, or necrosis, of the petrosa during the course of a chronic middle ear suppuration; intracranial complications or labyrinthine symptoms occurring during chronic suppurative otitis media, or an acute exacerbation of a chronic tympanic suppuration with mastoid involvement.

ELLEN J. PATTERSON.

**Dighton, A.: The Blood-Clot Method as Applied to the Mastoid Operation.** *Practitioner*, 1914, xcii, 755.  
By Surg., Gynec. & Obst.

In this, the first article on this topic appearing in any British journal, the blood-clot method as applied to mastoid surgery is enthusiastically endorsed. The author explains the beneficial action of the blood-clot method as depending upon known physiological phenomena, the presence in the blood of two substances:

1. The amboceptor, or immune body, which is produced in the blood by the presence in the body of a particular bacteria.

2. The complement, or alexin, which occurs naturally in the blood-serum, but, by itself, has no action upon the bacteria. When, however, the amboceptor acts upon the bacteria, these become vulnerable to the complement, which dissolves them.

The author applies this process as occurring in the mastoid cavity in the following words: "After the operation the majority of the bacteria are killed by the antiseptic used. Then the cavity is filled with blood-clot. The blood contains amboceptors to the bacteria present, and is brought to the part in comparatively large quantities. The blood-clots, and the serum, containing the complement, separate; therefore we get amboceptor catching the bacteria, and, when caught, the complement ready to dissolve both.

The author makes no attempt to preserve periosteum or to make a periosteal flap. After the operation is performed the cavity is dried with swabs, painted with pure carbolic acid, and immediately dried out again. The skin edges are rubbed with gauze to promote bleeding and the wound closed with silkworm gut sutures — usually three. The external auditory canal is packed with a plug of wool and the entire area is swabbed with ether, covered with gauze wrung out in acetone collodion, and allowed to dry. The dressing is removed on the fourth or fifth day.

The advantages of the blood-clot method are:

1. Less disfigurement, as the clot forms an excellent scaffolding for the formation of new bone.
2. No painful after-treatment.
3. Healing is markedly hastened.

The method is not applicable to cases in which the sinus, the dura, or the facial nerve is exposed.

OTTO M. ROTT.

**Dench, E. B.: The Treatment of Accidental Wounds of the Dura during Operation upon the Mastoid Process.** *Laryngoscope*, 1914, xxiv, 594.  
By Surg., Gynec. & Obst.

Wounds of the dura in the middle cranial fossa, whether accidental or due to necrosis, are not necessarily followed by severe sequelæ provided the operator is careful to preserve perfect asepsis during the entire operation.

The author's technique is to expose a large area of dura and, after every trace of disease has been cleared from the tympanic cavity, the dural opening is enlarged by two crossed incisions. This opening is firmly packed with iodoform gauze to cause sufficient pressure to secure an amalgamation of the cerebral membranes about the wounded area and thus avoid meningeal infection.

ELLEN J. PATTERSON.

**Hall, G. C.: Surgical Judgment in Operations for Acute Mastoiditis.** *Ky. M. J.*, 1914, xii, 368.  
By Surg., Gynec. & Obst.

There are no symptoms which point unmistakably to mastoiditis, but any combination of three or four of the cardinal symptoms if continued for twenty-four or thirty-six hours should convince one of such a condition, although there are undoubted cases of mastoiditis with practically all of the classic symptoms absent.

All cases of middle ear inflammation should be watched from incipency for the advent of signs of

mastoid involvement, in which case operation should be done at the earliest possible moment.

The author emphasizes two points in his technique: (1) the importance of wide opening of the drum membrane, and (2) the excavation forward from the antrum of the zygomatic cells and in the direction of the aditus ad antrum.

In the discussion which followed, the general consensus of opinion was that early operation with thorough evacuation of all the diseased structures made for the safety of the patient.

ELLEN J. PATTERSON.

**Braun, A. and Friesner, I.: The Diagnosis of Endocranial Complications of Suppurative Labyrinthitis.** *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxiii, 9.  
By Surg., Gynec. & Obst.

Intracranial complications are relatively more common with acute labyrinthitis, because there is no time for the inflammatory process in the labyrinth to be walled off; but on account of the overwhelming predominance of chronic overacute suppurative labyrinthitis, intracranial complications are more frequently observed in association with the chronic form.

Where the labyrinthine functions have been impaired but not entirely destroyed, it is difficult to differentiate between labyrinthine disease alone and labyrinthine disease complicated by disease in the posterior fossa, and other symptoms for diagnosis must be depended upon. Where the labyrinthine functions have been totally destroyed, the existing symptoms can be easily ascribed to the complicating intracranial lesion.

Intracranial complications of suppurative labyrinthitis usually occur in the posterior fossa, rarely in the middle fossa. The symptoms common to all forms of inflammatory processes in the posterior fossa are headache, vomiting, and vertigo.

ELLEN J. PATTERSON.



# SURGERY OF THE NOSE, THROAT, AND MOUTH

## NOSE

**Thomson, St. C.: Some of the Symptoms and Complications of Sinusitis.** *Practitioner*, 1914, xcii, 745.  
By Surg., Gynec. & Obst.

The author groups the symptoms of sinusitis under four chief headings as follows:

1. Symptoms in neighboring regions.
2. Symptoms in more distant organs.
3. Symptoms of interference with the general health.

4. Intracranial complications.

Under the first group, symptoms in neighboring regions, the following arrangement is observed:

a. Nasal symptoms, such as obstruction and discharge.

b. Symptoms in nasopharynx and pharynx — postnasal catarrh and pharyngitis.

c. Ocular symptoms — orbital cellulitis, periostitis of orbit, retro-ocular phlegmon, blepharitis, phlyctenular keratitis, diminution of field of vision, asthenopia, scotomata, photophobia, dilatation of the pupil, blepharospasm, ptosis, iritis, cataract, hemorrhagic retinitis, glaucoma, and optic neuritis.

d. Aural symptoms — tinnitus, vertigo, earache, eustachian catarrh, and purulent otitis media.

e. Toothache.

f. Cranial symptoms — headache, faceache, hemicrania, and neuralgia.

g. Cutaneous affections of the face — eczema of nostrils and upper lip, erythema, oedema fugax, abscesses of face, and attacks of facial erysipelas.

Under the second group, symptoms in the more distant organs are:

a. Larynx and respiratory tract — purulent or scabby laryngitis and bronchorrhœa.

b. Digestive tract — gastric disturbances, obstinate vomiting or diarrhœa, bad taste.

c. Vascular system — anæmia, phlebitis, bradycardia.

Under the third group, symptoms of interference with the general health are mentioned:

a. Loss of weight, feverish attacks simulating typhoid or malaria, pyæmic metastases, insomnia.

b. Reflex cough, winter catarrh, and such cerebral conditions as irritability, loss of memory, languor, weariness, stupor, aprosexia, neurasthenia, melancholia, and weakened resistance to the action of alcohol and tobacco.

Under the fourth group, intracranial complications are found:

a. Meningitis — more frequently from pus in the ethmoid bone.

b. Cerebral abscess — usually from frontal sinus suppuration.

c. Thrombosis of cavernous sinus and basal meningitis — usually from sphenoid trouble.

OTTO M. ROTT.

**Lynch, R. C.: Vacuum Disease of the Maxillary Sinus.** *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxiii, 59.  
By Surg., Gynec. & Obst.

The author reports the history of six cases of vacuum disease of the maxillary sinus, in which the symptoms were promptly relieved by puncture of the naso-antral wall.

Cases exhibiting symptoms of constant unilateral pain in the eye in the region of the naso-antral wall, or pain localized in all of the teeth and unrelieved by nasal applications; nasal reflex neuroses; change in the quality of the voice; inability to probe the cavity; together with negative nasal findings, negative transillumination, and negative X-ray should lead to the suspicion of a negative pressure condition.

ELLEN J. PATTERSON.

**Cohen, L.: Corrective Rhinoplasty.** *Laryngoscope*, 1914, xxiv, 565.  
By Surg., Gynec. & Obst.

The author thinks the satisfactory cosmetic effects in these operations depend upon the free mobilization of the entire bony and cartilaginous framework, the proper placing of the nose in the middle line of the face, and its retention there with some suitable apparatus.

He operates under strictly aseptic conditions, using ether or local anæsthesia, and, after making an incision within the vestibule of the nose, works subcutaneously to remove any redundant bone and cartilage or to mobilize the bony or cartilaginous framework, after which a copper saddle is adapted and adjusted to hold the parts in proper position. The vestibule is packed loosely with iodoform gauze.

ELLEN J. PATTERSON.

## THROAT

**Carmody, T. E.: Histopathology of the Faucial Tonsil.** *Laryngoscope*, 1914, xxiv, 576.  
By Surg., Gynec. & Obst.

The lymphoid structures of the upper respiratory tract all have their periods of activity which are not coincident but successive, or slightly overlapping; and while the pharyngeal is retrogressing, and probably the faucial also, the lingual and laryngeal are reaching the height of activity and beginning development respectively.

The faucial tonsil resembles the lymph-glands more closely than any of the other lymphoid tissues in shape and structure, having a capsule although not complete, fibrous trabeculæ, adenoid nests, and

a rich supply of lymph-vessels which drain into the superior deep cervical chain of glands.

A study of the tonsils removed showed destruction of epithelium on the surface and in the crypts; the older the patient the less adenoid tissue and the more connective tissue, and the greater the number of attacks of tonsillitis or abscesses the greater the amount of connective tissue. ELLEN J. PATTERSON.

**Thomson, St. C.: Intrinsic Cancer of the Larynx; Complete Excision Apparently Effected by Endolaryngeal Operation.** *Tr. Am. Laryngol. Ass.*, Atlantic City, 1914, May.

By Surg., Gynec. & Obst.

The conclusions of the writer are:

1. Cancer of the vocal cords in the early stages is strictly limited and very slowly progressive.

2. Diagnosis is based chiefly on inspection of the larynx. Where the growth is superficial and not infiltrating it can be confirmed by microscopic examination.

3. The growth may be completely removed endolaryngeally, even when it occupies the entire length of a vocal cord.

4. Laryngofissure is the operation of choice in all cases of endolaryngeal cancer. It is not a dangerous operation, and offers the best prospects because the disease remains superficial and limited for a time, and finally there is a lasting cure in 80 per cent of the cases. The value of indirect laryngoscopy is strongly insisted upon as being far gentler than the direct method.

RICHARDSON, of Washington, spoke of one case which he had five or six years ago in which there had been no recurrence, while most of his other cases suffered recurrences. Only one had a recurrence *in situ*.

SOLIS-COHEN, of Philadelphia, has done a number of these operations and has never seen a recurrence. His method is to make an incision through the perichondrium all around the growth, and then with blunt elevator the parts are lifted up. With a curved serrated scissors the whole mass is taken up, perichondrium, mucous membrane, and the growth, but the growth itself is not touched at all with any instrument.

MAYER, of New York, spoke of the method of producing anæsthesia by injecting ether into the intestine.

OTTO M. ROTT.



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## SURGERY OF THE EXTREMITIES

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## GENITO-URINARY SURGERY

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# INTERNATIONAL ABSTRACT OF SURGERY

NOVEMBER, 1914

## MONTHLY COLLECTIVE REVIEW

### TESTS OF RENAL FUNCTION AND THEIR PRACTICAL APPLICATION IN SURGERY

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**A**SIDE from the suggestion of an internal secretion which acts in the control of nitrogenous metabolism, the sole function of the kidneys is the secretion of the urine. Pouring the complete evidence of their activity directly into the external world, an exceptional opportunity is given for the study of this evidence and thus to estimate the secretory activity of these organs. With the exception of hippuric acid, all substances excreted by the kidneys are brought to them preformed in the blood. The composition of the urine shows the complexity of these substances. Urinary analysis, although developed to a very high degree, can furnish very little information concerning renal function and the actual retention of these complex waste products in the body. Even extensive metabolic studies, which are only exceptionally applicable, have failed to furnish the needed information. This has led to the experimental and clinical development of other more purely functional tests of renal activity and renal efficiency.

We have a very vague understanding of what is meant by secretory activity. Neither of the two theories of urinary secretion<sup>1</sup> that have been proposed is conclusive or complete. We know that marked disturbances in function are not necessarily associated with anatomic changes. They may precede the onset of demonstrable lesions, as in toxic nephritis, and our present methods of study are inadequate for the actual

demonstration of these changes in biochemica activity. On the other hand, demonstrable anatomic changes in structure do not necessarily mean changes in function. The remarkable reserve power of the kidney with its potentiality to regenerate or to undergo compensatory hypertrophy often prevents any change in function even with the development of a diffuse anatomical lesion; therefore, it is not possible to correlate function with structural changes, and functional studies have only an empirical value. The failure of the kidneys to excrete phthalein indicates severe renal disease because experience shows this to be the case. It does not tell us the cause of this failure, whether due to some particular form of glomerular or tubular nephritis, to polycystic kidneys, or to multiple renal calculi, all of which conditions may be functionally identical.

Functional tests are robbed of most of their value in the study of medical diseases by this lack of correlation between function and structure. In surgical conditions other methods of study, such as the X-ray, ureteral catheterization, collargol skiagraphy, etc., make up for this deficiency, and their use in renal diagnosis and in the estimation of surgical risk has come to be absolutely indispensable to the surgeon. The value of functional studies in medicine was exhaustively discussed a year ago (Christian, Janeway, and Rowntree) at the Congress of American Physicians and Surgeons. It is proposed, in the present review, to confine the con-

<sup>1</sup>For discussion of literature on theories of urinary secretion, see Magnus, *München. med. Wchnschr.*, 1906, xxviii, xxix; also Otto Cohnheim, *Zeitr. f. Physiol. Chem.*, 1912, cxxx, i, 95.

sideration of these tests to the more brilliant and definite surgical standpoint. The same tests are applicable in both divisions; no separation of medical functional tests and surgical functional tests can be made, but the relative significance of each test, all of which parallel each other, is important.

### PART I

#### CRITICAL REVIEW OF TESTS

Inactivity on the part of the kidneys to pour into the urine substances brought to them in the blood is determined by examining the blood and the urine for these substances, and the many methods for making these tests fall into one of two groups according to which fluid is examined: (1) tests of retention (blood), and (2) tests of excretion (urine). These two groups are not distinct, as some substances, urea, for example, are measured in both the urine and the blood and the relative differences of retention and excretion taken as an indication of renal activity; or these differences may be aggravated by the purposeful introduction of a known amount (urea) into the circulation. Again, the test for hippuric acid in the urine differs from all the others in that this substance is formed in the kidney itself and indicates glandular activity.

The various methods may be classified, and will be individually considered in the following order:

- I. Tests of Retention.
  1. Nitrogen and Urea.
    - Urine (tests of excretion).
    - Blood (tests of retention).
    - Urine and blood, ureosecretory index (Ambard's constant).
  2. Chlorides; urine, blood, and hæmorenal index.
  3. Acidosis.
  4. Cryoscopy; urine, blood, and hæmorenal index.
  5. Electrical conductivity; urine, blood, and hæmorenal index.
  6. Wright's excretory quotient.
  7. Urinary toxicity.
  8. Indican in the blood.
- II. Tests of Excretion.
  9. Polyuria test.
  10. Diastase.
  11. Phloridzin.
  12. Potassium iodide.
  13. Lactose.
  14. Salicylic acid.
  15. Benzoic acid (hippuric acid).
  16. Additional substances.
  17. Dye stuffs:
    - a. Rosanilin.
    - b. Fuchsin.
    - c. Trypanblau.
    - d. Fluorescein.
    - e. Methylene blue.
    - f. Indigo-carmin.
    - g. Phenolsulphonephthalein.

#### TESTS OF RETENTION

*Nitrogen and urea.* Practically all of the waste products of protein metabolism are eliminated by the kidneys<sup>1</sup> and the greater part of this is in

the form of urea. This urea and the allied nitrogenous substances are not formed in the kidneys, but are brought to them in the blood for elimination. The nitrogenous constituents of the urine, other than urea and uric acid, are little affected by the diet. Urea varies almost directly with the food protein, which is probably converted during digestion into ammonia and amino-acids and then changed by the liver into urea, which is carried by the blood to the kidneys and excreted without entering into tissue formation at all (Folin). Uric acid is variable with the amount of such foods as liver, sweetbread, brain, etc., and uric acid and urea do not run parallel in either the urine or blood. This would suggest that the estimation of other more constant substances (creatinin) would be a better indication of kidney function were it not for the fact of their small amount and that they are evidences for the most part of special metabolism and subject to related variations. It will be seen that very extensive studies are needed in order to connote these various nitrogenous constituents of the blood and urine and to determine the significance of various related changes in their retention and excretion in disease. Diet, disturbances in physiologically related organs, and influences of special forms of metabolism have an important and, as yet, little understood, bearing.

*Methods of estimation.* Studies in nitrogen retention have been handicapped by the want of a simple clinical method of estimation. The earlier methods for the urine (Kejldahl, Folin, Moerner-Sjoeqvist, Benidict) were too complicated and gave way in clinical work to the rapid sodium hypobromite method. This method has been repeatedly shown to be most inaccurate. The hypobromite deteriorates rapidly, attacks other nitrogenous bodies and only about 90 per cent of urea is broken up by it (Agnew). Marshall found variations of from 10 per cent to 60 per cent in the common method of Doremus. Ronchèse's modification is less inaccurate, maximum variation 6.5 per cent (Weill). The hypobromite method introduced as early as 1872 by Yvon, has been modified for clinical blood work by Widai and Javal, and still further controlled for temperature and barometric pressure, as advised by Ambard and Hallion, is in almost universal use in France. Its reliability has never been thoroughly checked by comparison with known scientifically accurate methods. For scientific

<sup>1</sup> Nitrogen of the urine exists as urea nitrogen, 87.5 per cent; ammonia nitrogen, 4.3 per cent; creatinin nitrogen, 3.6 per cent and purin nitrogen, uric acid, xanthin and hypoxanthin. There is a small amount of unknown nitrogen, oxyproteic acids, polypeptids, etc. (Folin). Nitrogen of the blood exists clinically as non-protein nitrogen, 100 per cent, of which urea nitrogen forms about 60 per cent; ammonia nitrogen and

uric acid nitrogen are also measurable. The urea of the blood arises chiefly by the dehydration of ammonia salts and the diamidization of monoamino-acids (glycocoll, leucin) in the liver, and from a further conversion by a special uricolytic ferment of uric acid about one-half of which is changed to urea. Muscle metabolism particularly influences uric acid.



estimations of nitrogen, investigators have used the complicated Kejldahl method. Recently, 1912, Folin and Denis have introduced accurate and simple methods, and Marshall, 1913, without sacrifice of accuracy, has simplified still more urea determinations in both the urine and blood.

*Nitrogenous bodies in the urine.* Urea and related bodies have been thought to be excreted by the tubules. Recently, Folin, Karsner, and Denis have shown that additional involvement of the glomeruli is extremely important in leading to retention. (Uranium with injury of tubules [and glomeruli] gave marked accumulation; chromium with tubular injury, only moderate accumulation; and cantharidin with glomerular [and tubular] injury, marked retention.) Many (Albarran, Legueu, Pirondini, and others) have noted that the urea excretion is influenced by water output although urea may be retained in the blood without corresponding blood dilution permeating the tissues, cells, and fluids of the body in almost equal concentration. Boyd and Murphy found an almost constant relation between the amount of water ingested and the amount of urea excreted—the more water, the more urea. The maximum concentration of urea in the urine is about 53 grams per liter (Weill). A case of oliguria may have nitrogen retention because of insufficient fluid for excretion.

The old clinical method of the 24-hour estimation of urea has little value from a functional viewpoint. However, repeated low urea findings, the diet being known, have considerable significance. According to the physiologic law of Voit, the body in health maintains a state of nitrogen equilibrium; that is, the nitrogen ingested is returned in exact amount in the excretion products. Kornblum gave this principal clinical application in 1892 in an effort to determine the extent of retention in disease, since it was found that here the nitrogen of ingestion and excretion were variably unequal. The method is laborious (Kejldahl) and only exceptionally applicable, and has been found by Fleischer, von Noorden, Prior, and others to be often unintelligible, inasmuch as whatever form of nephropathy may be present, the nitrogen excreted may be capriciously equal, less or greater than that ingested. Cathelin considers total nitrogen determinations in the urine as valueless. Kornblum, von Noorden, and Ritter have shown that with an increase in the protein diet, the urinary urea of a nephritic increases much less rapidly during the next few days than in a normal individual, and the same result is obtained with Achard and Pousseau's alimentary urea test. The same finding may

also obtain in a patient with cardiopathy or cirrhosis, not from renal insufficiency, but because with the existing oliguria (600 to 800 ccm.), the maximum concentration of urea in the urine is already reached and the extra amount cannot be excreted readily.

*Value with ureteral catheterization.* Each kidney receives the same amount of urea in the blood for excretion. The factors that influence the changes in blood urea, therefore, are unimportant in estimating the relative capacity of each kidney toward this equal supply. The kidney that secretes less urea than its fellow is functionally deficient. The estimation may be made according to the relative concentration of urea on the two sides or according to the total output of urea for the period of collection. Inasmuch as certain factors modify the value of each method, they are best used together. Of the two, the total estimation is of more value (Barringer, Keyes) than that of concentration. The factors influencing each are: leakage around the catheter, unilateral or unequal stimulation of function (polyuria), and unilateral or unequal inhibition of function. Where the collection is incomplete because of leakage, the total urea estimations are clearly valueless, but the urea per cent would not be affected. Where there has been inhibition or stimulation of function, the interpretation of urea values is more difficult. The two kidneys do not do an equal amount of work continuously even in health. They have asynchronous periods of rest or increased activity which are aggravated frequently by the trauma of catheterization. These differences in work are equalized in the long run (8 to 10 hours [Albarran]), but in the short periods of observation necessary with ureteral catheterization, these differences may be considerable. The differences in work concern mainly the excretion of water, which markedly changes the urea per cent. Polyuria gives a low urea per cent and an increase in the total urea output, but this increase is slight. Inhibition of function on the other hand shows an increased concentration (up to 50 gms. per liter), but the work as well as water is inhibited and the total urea output is diminished and this diminution may be large. Disease tends to diminish both the urea concentration and the urea output and a careful interpretation of the influence of leakage, inhibition, etc., is obvious. Pirondini, following the lead of Achard and Pousseau, has attempted to enhance urea values by giving the patient 10 to 20 grams of urea in 350 to 500 ccm. of water, the so-called "experimental azoturia" test. According to its author, this test gives a more



constant and complete understanding of the potential power of the kidney inasmuch as it exaggerates the static differences and is probably more dependent upon functional conditions than simple polyuria. The extra urea may be given intravenously for ureteral catheterization studies.

*Nitrogenous bodies in the blood.* As early as 1829, Bostock noticed an increase in the amount of the urea in the blood of certain albuminurics. Richard Bright and others soon confirmed the finding. Piorry later (1847) introduced the term "uræmia," which was immediately adopted by clinicians to mean an intoxication of the organism by urea. It was soon shown, however, that urea injected experimentally, unless in very large amounts, caused no symptoms, and many cases of uræmia and advanced nephritis were found to occur without any increase of the urea of the blood. Strauss, in 1902, attempted to correlate definite types of nephritis with nitrogen retention; and ever since 1903, Widal and his associates have continually emphasized the significance of urea retention, although exaggerating its importance by a too schematic classification (azotémie, chlorurémie, hypertension vasculaire).

It is fairly well established that urea and non-protein nitrogen run about parallel, while uric acid may show unrelated variations and not go hand in hand with urea. Up to the present, most clinical work has been done with reference to urea, the nitrogen of which forms about 60 per cent of the total non-protein nitrogen. It is customary to consider the urea content of the blood as a whole without reference to its atomic nitrogen. The normal limits of blood urea have been found to vary between 100 and 550 mgm. per liter (Widal, Folin, Geraghty, Weill, etc.), total non-protein nitrogen, 50 to 330 mgm. per liter (Folin and Denis). Ovsiannikova found a mortality of 18 per cent in 11 patients with chronic nephritis whose blood urea was below 500 mgm. per liter. A mortality of 18 per cent in 27 cases with from 0.5 to 1 gm.; of 58 per cent in 12 patients with from 1 to 2 gm., and of 85 per cent in a fourth group of 7 cases with from 2 to 5 grams of urea to a liter of blood. The normal limit for urea retention has been arbitrarily placed at near half a gram per liter (Farr and Austin, 0.43 gm., Widal, Weill, Vallery and Radot, 0.5 gm., Geraghty and Rowntree, 0.55 gm.) and it is considered that so long as blood urea is below 0.55 gm. per liter there can be no nitrogen retention. When between this and 1 gram it may mean either a temporary or progressive azotæmia, and the prognosis will depend upon the findings of subsequent

and repeated examinations. Widal considers a case with this amount of retention as favorable, but when the urea rises to between 1 and 2 grams per liter the prognosis becomes grave and such a case has been found (Widal) to rarely survive a year, and when between 2 and 3 grams the outlook is still more serious. A retention of over 3 grams indicates impending uræmia and, almost invariably, a fatal outcome in a very short time. Folin and Denis consider a high retention a safe indication of impending uræmia. Farr and Austin found practically no retention in chronic nephritis with cedema and albuminuria, but other cases with hypertension always showed a figure between 0.4 and 1.8 gm. for non-protein nitrogen. Cardiovascular cases with renal congestion, but without renal disease, gave no evidence of retention. Uræmic states were invariably associated with retention, but no relationship could be established between the degree of increase and the tendency to uræmia. These general findings have been repeatedly confirmed.

*Ureosecretory constant.* In only the more advanced cases of renal insufficiency does nitrogen retention occur, and variations below these higher figures have practically no significance. In order to understand the functional capacity in cases without retention, comparative studies of the blood and urine have been advocated, particularly by the French. These studies because of the variations in each from time to time must be contemporaneous. Certain laws govern the interrelationship of the two (Ambard).

1. When the kidney excretes a urine of a constant concentration its urea output varies as the square of the concentration of urea in the blood. The concentration of urine-urea is expressed in grams per liter (C). The urea output represents the number of grams of urea excreted in the observed time corrected for the theoretical volume in 24 hours (V). The corrected volume (V) times the urea concentration (C) gives the urea output (D). The concentration of the urea of the blood (Ur) is also expressed in grams per liter. Therefore, provided the urine has a constant concentration the blood-urea divided by the square root of the urea output is a constant.

$$(K) \quad (K \text{ equals } \sqrt{\frac{Ur}{D}})$$

2. When a urine of variable concentration is excreted and the urea concentration of the blood is constant the urea output will be inversely proportional to the square root of the concentration of the urea in the urine. To test this law an arbitrary urea output is calculated for an ar-



bitrary concentration of 25 grams per liter ( $D_{25}$ ) from this equation:

$$\frac{D_{25}}{D} = \frac{\sqrt{C}}{\sqrt{25}} \text{ or } D_{25} \text{ equals } \frac{D \text{ times } \sqrt{C}}{5}$$

which leads up to the third law:

3. When the concentration of the urea in the blood and in the urine are both variable the urea output varies in direct proportion to the square of the concentration of the urea in the blood and in inverse proportion to the square root of the concentration of the urea in the urine. Thus,—

$$K \text{ equals } \frac{U_r}{D \text{ times } \sqrt{C}} \text{ or } K = \frac{U_r}{D_{25}}$$

The original formula of Ambard corrected the patient's body weight for an arbitrary weight of 70 kg. on the supposition that a large man would have correspondingly large kidneys. Legueu and recent workers with the "constant" consider this correction unnecessary.

Great accuracy is necessary in the urine collections, the time measurements, and the urea determinations. The loss of a few ccm., an error of a few minutes in the collection, or a difference of only 1 mg. in the urea estimation vitiates the result markedly. For these reasons the method is valueless (Legueu) in comparative studies with ureteral catheters (leakage, inhibition, stimulation). For the estimation of total function, however, a host of French workers hold the method in great esteem as furnishing the "balance of precision" in conjunction with blood urea. Recently Widal, Weill and Radot (July, 1914), after a comparative study of blood urea, Ambard's constant, and the phthalein test, found all three tests ran remarkably parallel, rising and falling together both in normal and nephritic patients. They confirm the precision of each test, but, because of this parallelism, favor the choice of the simplest technique, which is that of phthalein, and they remark in addition that phthalein is free from many errors to which the others are liable.

The normal constant varies between 0.06 and 0.08. Weill has found that ordinary polyuria, oliguria, changes in diet, variations in chlorides, and different positions do not affect the constant. Fever, diabetes, anæmia, and hydropigenous nephritis may lower the constant. A high constant, the technique being accurate, invariably means renal insufficiency.

Example of estimation of constant of Ambard in case two days after nephrectomy for tuberculosis. Urea determinations by Marshall method. Duration of urine collection, 1 hour. (The second hour collection for a

phthalein test was used.) = 52 ccm.  $V = 52 \times 24 = 1248$  ccm. Urea per cent = 23. per liter. Urea output =  $1248 \times 23\% = 28.70$  (D). Corrected for concentration of 25%

$$= 28.70 \times \frac{\sqrt{23}}{5} = 28.70 \times .84 = 24.10. \text{ Blood taken 20 min.}$$

after onset = .498 gram, urea per liter.

$$K = \frac{U_r}{\sqrt{D_{25}}} = \frac{.498}{\sqrt{24.10}} = \frac{.498}{4.9} = 0.1$$

Phthalein test (taken at same time) appeared: ten min., 1st hour 32%; 2d hour 12%.

**Chlorides.** The chief inorganic salts of the urine are the chorides, phosphates and sulphates of the alkalies, and alkaline earths. They gain entrance to the blood partly from the salts ingested with the food and in part from destructive metabolism, and are excreted by the kidneys in amounts to maintain a balance of neutrality between the acids and bases in the blood, lymph, and body tissues. Of these salts, sodium chloride occurs in the largest quantities (average, 15 gms. per day). The management of chlorides by the body is intimately associated with the water intake and output. In hydræmia, salts are retained in order to maintain the normal equilibrium and this hydræmia decreases or increases with salt excretion or salt retention. The increase in blood volume with salt retention necessarily raises the blood-pressure and this hypertension, as a rule, persists until the excess of salt is eliminated.

The place of excretion of chlorides in the kidney is a matter of some dispute. Schlayer, von Monakow, and others consider the tubules as the active part, while experiments by Underhill, Wells, and Goldschmidt tend to show that under normal conditions water and salts are passed through the glomeruli and their output controlled by the concentrating power of the tubules. Fitz distinguishes two types of abnormal salt reaction. In one, the added salt is retained because of the inability of the tubules to concentrate and of the failure of the glomeruli to show a diuretic reaction to the stimulus of the salt. In the other, added salt is promptly excreted, mainly by diuresis, because the glomerular mechanism is hypersensitive and promptly reacts.

Inability of the kidney to excrete salt, whether from glomerular or tubular disturbance, is followed by chloride retention, consequent water retention with overburdening of the cardiovascular system leading to hypertension, cedema, and toxic effects of salts on the tissues. The regulation of salt and water intake in these cases is of considerable importance. The relation of salt retention to cedema has been conclusively demon-

strated (Widal, von Noorden, Mueller, Achard, Strauss, and others). It should be emphasized, however, that oedema may be caused by cardiac or vascular changes with no salt retention from renal insufficiency. Great emphasis, particularly by French authors, notably Widal, has been laid upon the study of chlorides in nephritis. There may be retention of chlorides, "chlorurémie," without retention of waste nitrogen, "azotémie," the chloride retention often being the first indication of kidney insufficiency.

The clinician can readily recognize chloride retention. Oedema, when not due to vascular or cardiac causes, may alone be used as an index. The salt tolerance may be determined by getting the patient's weight every morning. An increase of each kilogram in weight is taken to mean the retention of from 5 to 6 grams of the salt that has been ingested. More laborious quantitative tests are in use but the results are often uncertain. For several days prior to the making of such tests, the diet of the patient must be regulated so as to give chloride equilibrium. A known amount of NaCl (5 to 10 ccm. of a 5 per cent sol.) is then injected intravenously and the chloride excretion is determined.<sup>1</sup> Snapper has shown that NaCl, when injected intravenously, may be absorbed by the erythrocytes and tissue-cells, irrespective of kidney permeability. The proportion of blood chlorides to urine chlorides

$\left(\frac{\text{Bl. NaCl}}{\text{Ur. NaCl}}\right)$  has been proposed as an index of kidney function, and chloride estimations have been made upon separate urines after ureteral catheterization, but none of the methods except those giving clinical indication of chloride retention has proved of practical value in functional work.

*Acidosis.* The body fluids are kept at a neutral and nearly constant reaction, although the production of acids, in the course of body metabolism, is greatly in excess of the bases. This neutrality is maintained by the separation from the blood in its passage through the kidneys of this acid excess. Under certain pathologic conditions, acids accumulate in the blood and tissues and produce the symptom-complex known as acidosis. This condition has long been recognized in association with diabetes, in which production of beta-orybutyric acid occurs in excess of the body's neutralizing power, irrespective of the disease of any excretory organ. Recently, Sellards (1910), Henderson and Palmer (1913), and others have demonstrated, both experimentally

and clinically, the existence of other forms of acidosis, due to excretory insufficiency or metabolic excess, which occur in various conditions—acute infections, cholera, nephritis, etc.<sup>2</sup>

The etiology of the acidosis of renal disease is not clear. It seems to be fundamentally a depletion of the body in alkalis from neutralization by acids. The acids accumulate not so much from an overproduction as from non-excretion by diseased kidneys. With advanced renal impairment, disturbance in the excretion of acids apparently occurs along with disturbance in the excretion of other substances, and these acids gradually accumulate in the body using up more and more of the bases for neutralization until the bases are seriously depleted and the acids come to be in excess. This would seem to be the last function of the kidneys to be lost, as Henderson and Palmer, in an extensive study of the hydrogen-ion content of the urine in nephritics, did not find an average acidity below normal, but slightly above the normal, and patients in fatal uremia still excrete acid salts so long as they excrete water.

The recognition of renal acidosis is of great importance for prognosis and treatment. Normally, a slight ingestion of alkali will show an immediate and temporary effect on urinary reaction, but in these cases of acidosis, massive doses of sodium bicarbonate, intravenously<sup>3</sup> administered even, may show no effect upon the urine for days, although, when the effect does become apparent, it persists for some time, a marked contrast to the short duration of the effect in diabetic coma. The existence of an acidosis in renal disease may be determined by test in urinary reaction after increasing doses of sodium bicarbonate—the determination of "bicarbonate tolerance" which unites treatment with diagnosis—or by an estimation of the reaction of the blood-serum. This latter method is practical in conjunction with blood urea determinations in that the indications for use are identical for both tests. Of fresh clear blood-serum 1 ccm. dropped into 10 ccm. of absolute alcohol (neutral) and filtered. The filtrate is placed in an evaporating dish, three drops of phenolphthalein added as an indicator, and evaporated over the water bath. Normally, the fluid takes a pinkish tinge with the onset of evaporation and this deepens to a distinct red as evaporation proceeds. In cases with acidosis the color is faint throughout and late in appearing, and in marked cases no

<sup>2</sup> A discussion of the acidosis theory of nephritis and uremia is foreign to the object of this paper. See Fisher, Barker, Weill, etc.

<sup>3</sup> The choice of alkali for intravenous administration is important. The carbonate destroys R. B. C. *in vitro* in fractions of a per cent. Bicarbonate has no effect up to 5 per cent (Sellards).

<sup>1</sup> For discussion of clinical methods of salt estimation, see Bayne-Jones, Arch. Internal. Med., 1913, xii, 90.



color is apparent, even with evaporation to dryness.

*Cryoscopy.* The physical chemist has long recognized (Raoult, 1882) the value of cryoscopy in the identification of various fluids. Isotonic solutions have the same freezing point (Vant Hoff, 1886) and in equal volumes contain the same number of molecules. Cryoscopy offers an accurate means of testing the osmotic pressure of solutions and of determining, independent of the nature of the molecules, the molecular concentration. However, the freezing point is not exactly dependent upon the number of molecules of substances but, according to the hypothesis of D'Arrhenius, upon the number of ions into which these molecules are dissociated when in solution. The greater the dilution, the greater will be the dissociation and *vice versa*; and in complex solutions, combinations may occur between molecules which diminish the ion content and, in consequence, raise the freezing point.

The determinations are made by means of special apparatus with which skill must be acquired before accurate readings can be made, as the sources of error are many. After Dreser's, Beckmann's is the oldest and most used apparatus and is still considered in many respects the best. Modifications have been introduced by Friedenthal (ammonium nitrate freezing mixture), Claude and Balthazar (ether), Waldvogel, Haidenhain, and others.

*Cryoscopy of the urine.* Dreser (1892) and von Koranyi (1897) were the first to apply these laws of physical chemistry to the clinical study of the urine. Inability of the kidney to excrete waste products would be expected to show an increase in the freezing point of the urine. Lindemann found that cystitis and pyelitis did not influence the freezing point. The normal  $\Delta$  for the urine is a most variable figure, influenced as it is by the character of the diet and water intake, and no standard can be given. Hamburger finds that the urates often precipitate at the freezing point, which gives rise to additional variation and error. The following shows the extremes obtained by different observers on 24-hour specimens from normal cases: v. Koranyi, 1.3 to 2.2; Lindemann, 0.9 to 2.71; Koepe, 0.115 to 2.54; Senator, 0.92 to 2.14; Roeder, 1.2 to 2.5; Rumpel, 0.9 to 2.3; Tieken, 0.98 to 2.56.

Dreser, Lindemann, Tieken, and others state that a freezing point constantly above  $-1^{\circ}\text{C.}$ , the amount of urine remaining normal, indicates the presence of nephritis. The reverse, however, does not hold. Roeder objected that the lowering of the freezing point in nephritis is probably due

either to polyuria or the giving of a nephritic diet, which tend to diminish urinary concentration. According to Casper and Richter, conclusions should not be drawn from a low reading before the question of dilution from polyuria has been determined, which is only possible where a 24-hour collection is made. Fuchs noted the interesting fact that, if the last two figures of the specific gravity reading (1015) are multiplied by the constant 0.075 ( $15 \times 0.075 = 1.12^{\circ}\text{C.}$ ), the result is the freezing point of that urine, and Kapsammer goes so far as to consider freezing point determination of the urine of no more value than simple specific gravity estimation.

Because of the great uncertainty in the results, attempts have been made to find a normal constant by comparing the freezing point determination with some other factor. Claude and Balthazar multiply the freezing point by 100, which they interpret to mean the number of molecules in 1 ccm. of the tested solution. This molecular figure multiplied by the 24-hour amount of urine gives the total molecular diuresis ("la diurese moleculaire totale") which divided by the body weight equals a normal constant ( $\frac{\Delta \times 24\text{-h. amount}}{\text{body wt.}}$ ).

V. Koranyi suggested a constant (Kochsalzequivalent) by dividing the freezing point by the sodium chloride ( $\frac{\Delta}{\text{NaCl}}$ ). Bugarsky proposed dividing the freezing point by the urinary specific gravity ( $\frac{\Delta}{\text{sp. gr.}}$ ). None of these suggestions is of practical value.

*Cryoscopy with ureteral catheterization.* The determination of the  $\Delta$  of the separate urines of the two kidneys, first used by Casper and Richter, has a much more definite value than that of the total urine. Leakage around one catheter does not affect the result, but the factors of inhibition and stimulation of function, influencing as they do the molecular concentration of the urine, lead to marked variations. Kapsammer, in order to control the error from a possible polyuria, suggests the estimation of the output of urine for one minute which multiplied by 1440 gives the 24-hour amount. A normal kidney puts out 0.5 ccm. per minute or 720 ccm. in 24 hours. Kapsammer thus estimates whether or not polyuria is present. Kövési, Roth-Schulz, and others have studied the influence of an experimental polyuria, the so-called "filtration test" upon the freezing point, and have found only a slight lowering of the  $\Delta$  on the diseased side. Strauss found that the freezing point of the better kidney did not stand in the same relation, on repeated examina-

tions, to the  $\Delta$  of the diseased kidney and emphasized the importance of having the patient on a strict diet for several days before the test, of catheterizing the ureters at a definite time after the meal, and of collecting the urine at intervals for a period of 2 to 3 hours. Von Illyes and Kövési, because of this marked irregularity in the  $\Delta$ , advised leaving the catheters in place for 6 to 14 hours and testing the whole urines at the end of this time. Where the differences on the two sides are slight, no conclusions can be drawn, and a low reading is of value only in the absence of dilution. Israel, Kutner, Casper and Richter, and others consider the  $\Delta$  of value, but Huerter, Zuckerkandl, Kapsammer, Rovsing, Gottstein, Geraghty, Cabot, Krotoszyner, and others have little to say in its favor.

*Cryoscopy of the blood.* The freezing point of the blood ( $\delta$ ) shows none of the irregularities and marked variations as enumerated for the urine. All observers have found a fairly constant molecular concentration of  $0.56^\circ$  C. for the blood in health. Koranyi was the first to note a lowering of " $\delta$ " in disease of the kidneys, and since then cryoscopy of the blood has held an important place in functional diagnosis. The test has been considered of particular value in the determination of total function by some, for which it has been very severely criticised by others (Israel, Tuffier, Barth, Rovsing, Federoff, Kapsammer, etc.).

Disease of the kidney is not the only factor which influences the molecular concentration of the blood. The freezing point may be considerably lowered in such conditions as sweating, jaundice, cyanosis, diabetes, cachexia, anæmia, typhoid, acute infections, and pneumonia. And what is more significant, a true elevation in the freezing point may occur with œdema or a large subcutaneous or intravenous transfusion, with disturbance in the circulation of the kidneys as in large abdominal tumor or cardiac affection, with cirrhosis, epilepsy, eclampsia, acute gastritis, the prodromal stage of malaria and in the terminal stage of malignancy. The deduction of the friends of the method that a high concentration means bilateral disease, a " $\delta$ " above  $0.60^\circ$  C. being a contra-indication to operation, may be very misleading, and is designated by Beer as a "crude logical error." Tieken thinks that cryoscopy may frequently fortell the onset of uræmia.

As in the case of the urine, investigators have tried to formulate a constant by some relation of " $\delta$ " to other values. v. Koranyi suggests the quotient  $\frac{\Delta}{\delta}$ ; Kövési and Suranyi sought to

interrelate the chemical analysis of the blood,

$$\frac{\text{"}\delta\text{"}}{\text{NaCl (blood)}} \text{ and } \frac{\text{"}\delta\text{"}}{\text{sp. gr.}}$$

but such formulæ seem to be valueless.

*Electrical conductivity.* The electrical resistance of fluids depends upon their content of electrolytes. The inorganic salts, acids, and bases form the electrolytes of the blood and urine. Albumin, sugar, urea, etc., are non-electrolytes. The electrical resistance of these fluids, therefore, is a measure of their salt content: the greater their salt concentration, the less their resistance. The method differs from cryoscopy, which is a measure of the total molecular concentration.

Comparative studies of the blood and urine, with reference to their electrical conductivity, as an indication of renal function, were first made by Dawson Turner, in 1907, who used Kohlrausch's method. The test has been very little used, Bromberg and Gruenbaum being its chief advocates, each of whom has introduced modifications in the technique. Other apparatuses are those of Loewenhardt and of von Siemens and Halske.

It has been found that the electrical resistance of the urine, even in health, is most variable, with an average of about 45 ohms; therefore, a study of the urine alone is valueless. Following the suggestion of Gibson, Turner applied the method to comparative studies of the blood and urine. Normal blood has an average resistance of about 93.5 ohms (Turner), which may rise to 130 or fall to 80. Blood resistance, therefore, is about two to four times that of urine, and this proportion is known as the "hæmorenal index"

$\left( \frac{\text{el. cond. of bl.}}{\text{el. cond. of ur.}} = \frac{93.5}{45} = 2.08 \right)$ . A high index indicates health; a low index, below 2, indicates disease. Bromberg considers that a diminution in the hæmorenal index is the first sign of urinary decompensation, an index around 1.5 being a contra-indication to operation; less than 1, a very grave prognostic sign. Sasaki, on the other hand, found no noticeable retention of electrolytes in the blood in experimentally produced renal insufficiency. Many extrarenal factors may change the index. Turner found a very low index in cases of acute croupous pneumonia, in diabetes mellitus, and anæmia. When applied to separate urines after catheterization the method may give definite values, as shown by the following case: Urine from right kidney, 156 ohms; from left, 48 ohms; blood, 97 ohms. Hæmorenal index

for right kidney,  $\frac{97}{156} = 0.6$ ; left kidney,  $\frac{97}{48} = 2$ .



*Excretory quotient of Wright.* Wright and co-workers (Kilner, Ross), proposed, in 1904, a simple method of determining the salt content of the urine and blood by finding at what point of dilution the urine or serum would hæmolyse a standard red blood corpuscle suspension. The test parallels electrical conductivity, but has been very little used, although Wright's findings have been confirmed by McCoy and by Howard.

*Urinary toxicity.* A method of pure theoretical interest was proposed by Bauchard to determine the toxicity of a urine, particularly with reference to the presence of uræmic substances, as an indication of renal function. Several animals were injected with varying quantities of urine and the lethal dose observed. The method has been condemned by DeClerq Achard, and others, and obviously has no practical value.

*Indican in the blood.* Quantitative determinations of indican in the blood have been recently proposed (Dorner) as an indication of retention from renal insufficiency. The studies of Dorner lead him to suggest that indican is not formed altogether in the liver, but may be a result of renal glandular activity. Indican of the urine was found too variable to be of any value.

#### TESTS OF EXCRETION

*Polyuria.* The excretion of water by the kidneys is intimately bound up with that of salt. Water (and possibly salt) is put out by the glomeruli, and the amount excreted controlled by the concentrating power of the tubules. Oliguria may result from salt starvation, and polyuria from salt excess. The polyuria of water, salt, diuretic drugs, etc., is fundamentally a vascular response and this response may be variously modified both in health and in disease. Schlayer has shown that with diseased kidneys added salt may produce (by fatigue) a rapid diminution of diuresis, and then, a restriction in the salt intake may show increasing polyuria as the kidneys recover. "Vascular hyposthenuria," in which there is no disturbance in the ability of the kidney to excrete salt, is totally different from the hyposthenuria primarily due to the failure of salt excretion. In beginning or early disease of the kidney, polyuria occurs because of vascular hypersensitiveness, but in advanced disease with true vascular change oliguria is the rule.

The urinary aqueous rhythm depends upon two factors: renal and extrarenal. The renal factors, as already indicated, are related to vascular and tubular activity, which are influenced by disease, by variations in blood chlorides, by compensatory hypertrophies, by renal fatigue, etc. The extra-

renal factors relate to the water supply before this reaches the renal filter. Sweating, vomiting, and nervous reflexes may all modify this supply. Errors in absorption (incomplete emptying of the stomach, diarrhoea, etc.), errors in circulation (portal stasis and hepatic sclerosis), and errors in heart action all variously influence the water brought to the kidney for excretion. The differences in kidney action due to the influence of position, ortho- and clinostatism, may modify urinary rhythm, as in nocturnal polyuria,<sup>1</sup> and hydronephrosis and vesical retention may mask the true output. It is seen, therefore, that the reaction of the kidneys to an experimental polyuria is a very complex phenomenon.

*Polyuria tests of total function.* The polyuria tests are essentially tests of variation in function and are applied with reference to total or to separate comparative functions of the two sides. Studies in the water intake and output, with reference to total function, have been carried out in various ways. Von Monakow proposed a "water test day" on which double the ordinary amount of water is given. Hedinger studied the diuretic action of an ordinary diet. Kövési and Roth-Schulz collect the urine every four hours for twenty-four hours and on the following day give, in the course of an hour, 1800 ccm. of water, after which the urine is collected every half-hour and studied as to the amounts and freezing points. Strauss kept his patients in bed with their last meal at 6 P. M. The night urine he collected at 10 P. M. and 5 A. M.; gave 600 ccm. of water at 6 A. M., and made hourly collections from then till 11 A. M.; and the amounts, NaCl, and freezing point were determined for each specimen. Vaquez and Cottet give 250 ccm. of milk for breakfast; lunch and dinner as usual, with 400 ccm. of water at each. The urine is collected from 9 to 7 in night, 7 to 9 in the morning, and 9 to 9 in day. Between 6:30 and 7 A. M., 600 ccm. of water are given. The 7 to 9 specimen indicates the polyuric response of the kidneys. These tests of total function are often of value to the clinician as a guide to treatment, but experimental polyuria acquires diagnostic value only when combined with ureteral catheterization.

*Polyuria tests with ureteral catheterization.* The fact that a diseased kidney has a much more constant function than a healthy one was pointed out by Guyon and Albarran in 1897. Albarran later (1903) formulated this law: "When one of two kidneys is diseased or more diseased than the other, changes in urinary function affect

<sup>1</sup> Vaquez and Cottet consider nycturia of interstitial nephritis as not due to decubitus but to retarded elimination during the day.



its function less than the other; the changes in difference in function between the two is due almost wholly to the variations in function of the healthy kidney." In other words, a diseased kidney is usually working at its maximum capacity. Upon these facts is based Albarran's polyuria test which, with slight modifications by Heitz-Boyer, is as follows:

The patient should not have eaten for 4 to 5 hours before the test.

The urine is collected by ureteral catheterization. When for any reason only one catheter can be passed, the urine from the opposite side is collected transvesically. It is best to use a No. 8 catheter to avoid error from leakage. Where double catheterization is possible a third catheter should be inserted into the bladder as a control of leakage about either ureteral catheter.

After catheterization the kidneys should be allowed to function from 15 to 20 minutes before beginning the test, so as to allow them to regain their normal rate and thus avoid as much as possible errors from inhibition or stimulation due to reflex disturbances.

The urine is collected from each kidney in separate tubes by half-hour periods.

At the end of the first half-hour the patient is made to drink three large glasses of water.

The first period gives the normal output, the static condition; the next three periods show the water reaction on the two sides and give the functional variation.

The extrarenal causes of variation represented by the functional conditions of organs physiologically related to the kidneys do not apply in the same degree to catheterized specimens in which comparative values are sought, but in addition to the same intrarenal factors as mentioned, of which the chloride variations and compensatory hypertrophy are perhaps the most important, certain technical errors very frequently occur (such as leakage about one or both catheters or unilateral reflex inhibition or stimulation of function) which tend to render the findings even more accidental and uncertain. Cathelin, Carlier, Schueller, and Kapsammer have condemned the test, the latter emphasizing the error of an almost universal unilateral reflex polyuria. Richter criticized the test as giving most incomplete information even when positive. Kunestky recognized the great difficulty of using double catheters of sufficient size to prevent leakage. Keyes considers the "multiplication of the observations of urine drawn from the two kidneys under varying conditions" as its chief virtue. Legueu and De Berne Lagarde conclude that a positive polyuria

on the healthy side indicates the safety of removing the other kidney, but a negative polyuria on the suspected healthy side does not mean renal insufficiency and, therefore, contra-indicates nephrectomy. The results of a recent and thorough study by Pirondini are conclusive. He finds that an experimental polyuria is clearly positive and only reaches its maximum importance as an indication of renal function when there is a notable increase in the urine volume in the second phase of the test. Even with a positive reaction, the character of the polyuria is of greater importance as a qualitative than as a quantitative indication of function. With ureteral catheterization, comparative findings alone are of value. He considers experimental azoturia of much more value as a functional test than simple produced polyuria.

*Diastase.* A ferment capable of digesting starch has been known to exist in the urine. This is brought to the kidney, for excretion, in amounts that vary with the functional activity of the pancreas and salivary glands. Hierata found that rabbits with experimental nephritis put out less of the ferment than normal rabbits and this led Wohlgemuth to propose a method of estimation of urinary diastase as a test of renal function. Estimations of diastase in the urine and stools have been used as an indication of pancreatic function, although Burrow, Durand, Brown, and Wohlgemuth all agree that its chief value in the urine is in indicating renal insufficiency, irrespective of conditions of the pancreas and salivary glands.

*Technique of test* (Wohlgemuth). The urine is first neutralized and amounts of from 0.6 to .04 ccm., decreasing in mathematical ratio, placed in a series of 12 test tubes. Sufficient 1 per cent NaCl sol. is added to each tube to bring the amount of fluid in each to 1 ccm. Two ccm. of a freshly prepared 1:1000 solution of soluble starch is added to each tube, the tubes then being placed in the water bath at 38° C. for 30 minutes. To determine the amount of starch digestion, N/50 iodine solution is added to each tube in amounts to give a permanent color. Complete digestion is shown by no color appearing on the addition of iodine, and the tube of the series first showing complete digestion is taken as indicating the diastatic content, which is expressed in the number of ccm. of 1:1000 starch solution capable of being digested by 1 ccm. of the urine tested.

The average diastatic content for a 24-hour specimen of urine varies between 16.5 and 90 ccm., represented by "D." A catheterized specimen from one kidney represented by "δ" has in one ccm. the power of digesting from 6.6 to 25 ccm. of 1:1000 starch solution. Wohlgemuth himself has emphasized the difficulties in interpreting the findings. The wide limits of



normal variation render the total estimation ("D") of very little value. Brown found low readings in many jaundiced cases with good kidneys. Dilution, inhibition, and the other errors of ureteral catheterization affect the diastatic output, but Geraghty, Rowntree and Cary are of the opinion that diastase, because of its minute quantity and ferment action, is not so markedly affected by dilution as is the urea per cent. Blood activates the ferment and the presence of blood or blood-serum in the urine causes serious error. Where the estimations are made immediately in catheterized specimens this source of errors is insignificant. The neutralization of the urine is very important according to most workers, but Brown found that ordinary urinary acidity gave insignificant variations in the activity of the ferment.

*Phloridzin.* The remarkable action of phloridzin in rendering the kidney permeable to sugar was discovered as early as 1882 by von Mehring. The nature of the reaction is not known, although it would seem to be purely renal from the fact that the sugar of the blood shows no increase at the time. Later, the marked effect of disease of the kidney upon the reaction was noted (Zuntz, 1888; G. Klemperer, 1892; Schabad, 1894, and others), and this led to the exploitation of the test for functional work. The test has been generally considered as differing from all others by indicating glandular activity in contradistinction to excretory activity, but, unless the sugar is synthesized in the kidney as an effect of the drug, the supposition is erroneous. The excretion of sugar from the blood, although rendered active by phloridzin, is nevertheless analogous in every way to the excretion of urea or of phthalein, and is a parallel indication of function.

The test is commonly applied by the subcutaneous, or intravenous, injection of from 0.01 to 0.05 gm. of phloridzin in aqueous solution (small amount of sodium bicarbonate favors solution), which must be freshly prepared and boiled just before use (Krotoszyner) to insure complete solution. The urine is tested, after ten minutes, every minute until the reduction of Fehling's sol. indicates the presence of sugar. Estimates of the 15- or 30-minute outputs are made, and from these the curve of elimination is plotted. Normally, sugar should appear in from 10 to 15 minutes, although a delay up to 30 minutes is considered within normal limits. The excretion reaches a maximum in 1 hour and gradually disappears in from 2 to 3 hours, with a total excretion in that time of 1 to 2 grams (Rowntree and Geraghty).

The amount of sugar following phloridzin injections shows marked variations due, in part to inhibition and intrarenal causes, but in greater part, as shown by Roth, to the differences in diet. During fasting and after the ingestion of fat, the amount of sugar is low but may be increased 5 to 6 times after a meat or full carbohydrate meal and, after the ingestion of dextrose, may be even 11 times as great. Kapsammer (1906) emphasizes the influence of phloridzin upon the excretion of methylene blue and indigo-carmin, showing that during the sugar excretion the amounts of dye are remarkably reduced over the output when phloridzin is not used, and it has been shown by Frouin (1907) that phloridzin will not act so well in the presence of methylene blue as when used alone. (Simultaneous injection of methylene blue and phloridzin in a dog causes marked reduction in the amount of sugar in 10 to 12 hours over that eliminated with phloridzin alone.) Evidently there is a direct antagonism, the nature of which is not known, between these dye stuffs and phloridzin action.

The test has held considerable popularity with some (Achard and Delamere, Casper and Richter, Krotoszyner, etc.), but the results have been found to be unreliable by others. Frequently there is no reaction even in perfectly normal cases (Walker), and in others with only slight disturbance the test may show an exaggeration that is wholly misleading (Clairmont and Haberer). Casper and Richter recommend the test for use in conjunction with ureteral catheters, emphasizing the greater value of quantitative estimations over the appearance time (Zeitmethode), although Kapsammer believes the opposite. Comparative studies with the polyuria test (Blum and Prigl), indigo-carmin (Kapsammer), and phthalein (Roth, Stevens, Rowntree and Geraghty) show any of these three tests to be more reliable and less complicated than the more hypersensitive but variable phloridzin test.

*Potassium iodide and lactose.* The use of potassium iodide has mainly a clinical interest because of the findings with it, in conjunction with water, salt and lactose, of Schlayer and his colleagues, who claim by means of these four tests to be able to differentiate vascular and tubular lesions. Lactose and water show glomerular function, while potassium iodide and salt denote tubular activity. Their findings have not been universally confirmed.

Dyce Dukeworth introduced potassium iodide as early as 1867, but not until after the work of Achard and Delamere did it gain any prominence.



When given by the mouth, subcutaneously or intravenously, about 70 per cent (Olrum) is excreted by the kidneys unchanged (Lafay). It appears in the urine in about 15 minutes (Roux gave three minutes as appearance time with ureter catheters), and the excretion persists for from 30 to 36 hours (Stridini). The maximum output occurs during the second hour and over 50 per cent of the drug is excreted normally in the first 12 hours. Neubauer and Vogel give 11 different methods of estimation, of which Sandow's method is probably the best and will show the drug up to 1 to 10,000 dilution (5 ccm. urine; 1 ccm. dil.  $H_2SO_4$ ; 1 to 3 drops of 0.2 per cent sodium nitrate solution; chloroform, which in the presence of KI is colored violet).

*Lactose* was shown by Voit to be quantitatively excreted by the kidneys after subcutaneous or intravenous injection. De Bovis, later, showed that this occurred through the glomeruli, and Schlayer made use of this fact in studying nephritis, as already indicated. The test, as recommended by Rowntree, Fitz and Geraghty, would seem to have considerable prognostic value. Their method consisted in the intravenous injection of 25 ccm. of a 10 per cent solution, freshly prepared in distilled water and pasteurized for four hours on four successive days. Normally, this amount of lactose should be excreted in 4 to 6 hours. The test is considered of value in differentiating early forms of glomerular nephritis.

*Salicylic acid.* The use of salicylic acid as an indication of kidney function was introduced by Chopin in 1889 and again by Pugnot and Revilliod in 1903, but it has acquired no practical importance.

*Hippuric acid.* In 1879, Jarsfeld and Stockvis took advantage of the fact, discovered by Bunge and Schmiedeberg, that the kidney apparently has the ability to synthesize hippuric acid from benzoic acid and glycocholl, by studying the relative output of hippuric acid in the urine in health and disease after feeding sodium benzoate. Achard and Chapelle again commended the test in 1900, but nothing has been made of it since. The test is unique in being an evidence of pure glandular activity, and, so far as is known, hippuric acid is the only substance synthesized in the kidney cell.

*Additional substances.* Many other substances have been used at various times to test kidney function, none of which has proved of any particular value: asparagin, introduced by Hahn and De Beauvais; opium, by Charcot; quinine sulphate and potassium and sodium bromide; pepsin ferment in the urine, by Strauss.

*Dye stuffs.* Several dyes have been introduced at various times in the past for the experimental study of renal activity, but with the exception of three, methylene blue, indigo-carmin and phenol-sulphonephthalein, none has attained any degree of popularity. Of the dyes that have been advocated, and later discarded, may be mentioned: fuchsin (Bouchard, 1873), rosanilin, (Lepine, 1898; Dreyfus, 1898), trypanblau (Muellendorf), and uranin—"fluorescein natrium"—(Strauss, H. 1913).

*Methylene blue.* Kutner and Casper first attempted to use methylene blue as a kidney test in 1892, by observing the ureteral orifices after its injection (chromocystoscopy); but the method attracted no attention until exploited by Achard and Castaigne (in 1897), who pointed out that the time of appearance and the maximum excretion are delayed and that the duration of excretion is prolonged in renal disturbance. These findings were soon confirmed by Albarran and Bernard, who combined ureteral catheterization with the method, and by Friedrich Mueller in 1899.

The drug may be given by mouth, in one-fourth grain doses, but has commonly been administered intramuscularly in the gluteal region (15 minims of a 5 per cent aqueous solution), in which way it is sometimes painful. It is almost always very painful when given subcutaneously. Only about 50 per cent of the dye is excreted in the urine, the fate of the other half being unknown. Underhill and Claussen have shown that the pigment is not an individual chemical substance, but is a mixture with methylene azure, and that it is partially broken down in the body and excreted in part in the form of leucoderivatives, and Mueller has since found six end-split products. These chromogens make their appearance, normally, in the urine in about 15 minutes, ahead of the dye itself, which usually does not appear before about 30 minutes after the injection. Both continue to be excreted for an average of 36 to 48 hours and between the two a certain excretory relation is affirmed (Chauffard and Cavasse; Oulmont and Raymond, 1899). The chromogens can be recognized, after the addition of a little acetic acid, by boiling. Quantitative estimations of the output have been attempted, after such conversion, by measuring the amount of a known solution of methylene blue, necessary to give comparable colors, to be added to an equal amount of the individual's urine voided before giving the dye.

After the injection in certain forms of nephritis (chronic interstitial), the excretion has been found to be prolonged as long as 15 days, and in some



cases has not appeared for six hours (Albarran and Bazy). Other forms of nephritis (chronic parenchymatous) may show no change from the normal (Bond, and Bond and Bonnet, 1898). Furthermore, the excretion has been found to show marked variations even in health. The amount put out does not follow a steady and unbroken course, but may rise and fall, or even show complete intermissions (Chauffard, 1898). In health, even, the output may be prolonged for as long as 6 days (Rowntree and Geraghty) or, in other normal cases, there may be no demonstrable output at all, the dye apparently being destroyed in the body (Pugnot and Revilliod, Walker.)

*Indigo-carmin.* Haidenhain found, in an experiment to disprove Ludwig's filtration theory, particles of indigo-carmin in the renal epithelium of the tubules, but none in the glomeruli, when the animal was killed at the proper time after the injection of the pigment. This fact led to the introduction of the dye, in 1903, by Voelcker and Joseph as a test for renal function, for which it has since gained many advocates.

The usual method of performing the test is to inject into the gluteal muscles 20 ccm. of a 0.4 per cent solution, which must be freshly prepared in sterile distilled water, as boiling renders it gelatinous. (Voelcker and Joseph's formula: 0.08 indigo-carmin, 0.1 NaCl, and 20 ccm. water.) In stronger solution the indigo-carmin exists as a fine suspension and not in solution. Only about 25 per cent of the dye is excreted by the kidneys after injection, the body taking care of the other 75 per cent in some unknown way. When given in large doses some of it is excreted in the faeces, after conversion by the liver into a leucoderivative. Considerable variation exists in the time of excretion of the part passed through the kidneys. A greenish blue tinge appears in the urine in from 9 to 11 minutes after injection in 94 per cent of all normal kidneys (Tanake), and the dye continues to be excreted for 12 (Walker) to 24 hours (Kapsammer) (Roth, 15 to 18 hours), with marked differences in the intensity observed. The test is practically applied as an indication of total function or in conjunction with cystoscopy or ureteral catheterization.

As a test of total function indigo-carmin is not satisfactory. Oppenheimer (1909) in an attempt to make colorimetric readings (Duboscq) found marked variations due to changes produced by the urinary pigments and, furthermore, in a purulent alkaline urine, the dye may be decolorized completely. Thomas, on the other hand, who stubbornly and now almost singly

upholds the virtues of indigo-carmin, believes that as accurate colorimetric determinations can be made with it as with phthalein. The maximum output in one hour is about one-half that of phthalein, or 20 to 25 per cent.

The dye was originally introduced for use in conjunction with cystoscopy, and Voelcker and Joseph recognized three types of cases with this method; the blue color appears at both ureteral orifices, promptly and simultaneously, in 6 to 10 minutes—normal case, the appearance and intensity are delayed on one side—unilateral disease, and the appearance and intensity are delayed on both sides—bilateral disease. The many errors inherent in the dye in chromocystoscopy have been emphasized by Max Roth: The appearance of the dye is not always positive and may be overlooked altogether. A negative appearance is likewise indefinite, because a slow flow of urine, an excretion of weak intensity, or a decolorization of the dye may cause it to be overlooked. Because of these faults the difference between the right and left can easily be misinterpreted or overlooked. Furthermore, the period of observation must often be prolonged for from forty-five minutes to 1 hour, which is hard on the patient and tedious for the doctor.

The method, therefore, is generally considered to be of much more definite value in conjunction with ureteral catheterization, as here not only the time of appearance but the relative outputs on the two sides can be determined; but the same fundamental objections hold here as for total determinations, and for simplicity, accuracy and completeness, the results cannot be compared with those obtained with phthalein. In certain cases, nevertheless, in which ureteral catheterization is impossible, chromocystoscopy with indigo-carmin will frequently be found to be a great aid in surgical diagnosis.

*Phenolsulphonephthalein.* Phenolsulphonephthalein (Remsen) is a synthetical product which Abel and Rowntree found was excreted unchanged in its passage through the body, by the liver in minute amounts, eventually quantitatively by the kidneys. The part that appears in the bile is reabsorbed from the small intestines and excreted by the kidneys so that only a trace can be found in the stools, even after enormous doses. Not a trace can be found in the pancreatic juice or saliva, and Plaggemeyer and Marshall found none in the sweat. The removal of "phthalein" from the body, therefore, seems to be a wonderfully specific function of the kidneys. Rowntree and Geraghty experimentally proved that the drug can be excreted by the cellular



activity of the tubules of the frog's kidney, and, presumably, the same holds for man; but secondary anæmia, produced in animals after the method of Straub and Barcroft by the same workers, would tend to show that *the glomeruli are also capable of excreting some of the drug*. Abel and Rowntree also found that the drug properly prepared is absolutely harmless, non-toxic and non-irritating. These striking properties immediately suggested its possible application in functional work, and Rowntree and Geraghty, 1910-12, investigated this problem so thoroughly, both experimentally and clinically, that, in spite of the enormous interest aroused throughout the world, little other than confirmatory studies have followed their original work. This confirmatory evidence of the great superiority of this test over all others is now overwhelmingly convincing. The unrivaled advantages, as claimed by the originators of the method, are these: 1. The complete elimination of the drug without chemical change by the kidneys. 2. The early appearance of the drug in the urine following its administration. 3. The rapid excretion of the drug by the kidneys necessitating observation only over a short time. 4. The brilliancy of color which is imparted to alkaline urines and which is not readily influenced by the coloring matter of the urine itself. 5. The facility with which the drug lends itself to colorimetric methods, making accurate quantitative estimations possible. 6. The simplicity of the technique for quantitative estimation. 7. The absolute non-toxicity of the drug. 8. The non-irritating nature of the drug locally. 9. The extreme smallness of the dose required and the assurance this gives of there being no extra strain placed upon the kidney during the test.

The technique of the phthalein test has remained practically unchanged since its introduction. The originators chose 0.006 gm. as the optimum dose and this has been universally adopted. One ccm. of a specially prepared solution of the dye, containing 6 mgm. to the ccm., is accurately injected.<sup>1</sup>

Subcutaneous, intramuscular, gluteal or lumbar, and intravenous modes of injection are in use, and it has been found that the time of

appearance and the total output for the first one or two hours differ with the place and mode of injection. The outputs after subcutaneous injection show irregularities due to differences in the rate of absorption. The absorption is more even and rapid following intramuscular injection while intravenous injection gives the most constant and ready supply to the kidney. Intralumbar absorption is superior to intragluteal, and the latter more constant than subcutaneous. Keyes and Stevens recommended the intravenous mode, particularly for use with ureteral catheterization, as a test can then be finished in 15 minutes to half an hour. Eichmann and Fromme, and Rubner favor the intravenous method for all determinations. The common practice of most surgeons is to use the intralumbar method for total function and the intravenous for separate functions.

The time of appearance in the urine after injection can be accurately measured by placing a retention catheter in the bladder, allowing the urine to drain into a test tube containing a few drops of NaOH, and the onset of excretion is marked by the first appearance of a pinkish tinge in the tube. The retention catheter is required only in cases with retention or residual urine. In cases with normal powers of urination they can be made to void every five minutes and the appearance time of the dye roughly noted. The very secondary importance of knowing the exact time of appearance makes it convenient, as a routine in cases without residual, to neglect its determination altogether, allowing ten minutes as the average, and to collect the urine at the end of an hour and ten minutes for the first hour's output.

The accuracy (to within a difference of 0.00004 gm. [R. and G.]) and simplicity of colorimetric determinations of phthalein insures its supremacy as a functional test, as it is the only test with which reliable and absolute values are obtainable. Each specimen is strongly alkalinized with NaOH to insure maximum intensity of color and, according to the degree of color, diluted to 100 to 1000 ccm.,—low dilution for weak color, high dilution for strong,—and a sample of this is then compared to the color of a standard solution of 6 mgm. to a liter. The necessary correction for difference in dilution gives the percentage of dye present in the specimen. Phthalein has been found to be unusually stable when in acid solution, in which it is colorless, but, when alkaline, the red color gradually fades. The presence of urinary pigments, pus, phosphates, bile, and indican do not

<sup>1</sup>The dye, a fine red crystalline powder, is prepared for injection as follows: 0.6 gm. of phenolsulphonephthalein and 0.84 ccm. of double normal NaOH solution are diluted with 0.75 per cent NaCl solution up to 100 ccm. This gives the monosodium or acid salt, which is red in color and slightly irritant locally when injected. It is necessary, therefore, to add 0.15 ccm. of double normal hydroxide, a quantity sufficient to change the color to a beautiful Bordeaux red (R. and G.). This solution is dispensed by Hynson and Wescott, Baltimore, in small convenient 1 ccm. ampoules. Roth has shown a considerable variation in the strength of preparations of different drug houses as compared to a standard 0.5 ccm.: Hynson and Wescott, 50 per cent; Ranke Apotheke, 38 per cent; Merk, 30 per cent.



materially interfere with colorimetric estimations. (Goodman-Kristeller). A standard made with the patient's own urine, to correct the error from urinary pigment, has been suggested (R. and G.; Cabot and Young). Adams and Wyman claim that a yellow-colored glass held between the eye and the colorimeter corrects this error (yellow urine), while Boidoch excludes urobilin with the spectroscope. These methods seem to be unnecessary refinements in technique. The presence of blood or of blood pigments in the urine, however, is troublesome, but very simply corrected, after dilution and *before adding alkali*, by boiling a portion of the specimen which coagulates the blood. The resultant clear fluid can then be decanted or filtered off, alkalinized to bring out the phthalein, and read as usual. When considerable blood has been present and the amount of urine small, the process entails some loss of dye.

*Value in the estimation of total function.* The time of appearance of phthalein after intralumbar injection in normal cases is from 5 to 11 minutes, and the output for the first hour is from 40 per cent to 60 per cent; for the first two hours, 60 per cent to 85 per cent (R. and G.). These findings, with few exceptions, have been universally

Investigator	First hour	Second hour	Third hour
Sehrt	45 to 56	69 to 94	
Fromme and Rubner (gluteal injection)		52 to 78 (men) 24 to 78 (women)	37 to 84
Bonn		30 to 56	
Albrecht		40 to 50	
Eichmann	Less than 40 per cent in 4 of 8 normal cases.		
Erne		45 to 70	

confirmed, and the exceptions have been shown by Max Roth to be due to errors in technique, to the use of an inferior preparation, to a different method of injection, to loss at the time of the injection through a defective syringe, or to an incomplete emptying of the bladder. The averages in women are lower than in men. The excretion of the drug has been repeatedly shown to be uninfluenced by changes in water excretion, as much dye being put out in two hours with 50 ccm. as with 500 ccm., and its excretion bears no relation to such other substances in the urine as chlorides, urea, albumin, sugar, etc., except as affected by the slight diuretic action of increases in some of these. It usually parallels urea, but only roughly, as it is unaffected by any of the many great factors in control of urea excretion. Rowntree and Geraghty found that those diuretics which stimulate the secretory cell (caffeine, urea, dextrose, calomel) slightly increase phthalein output, but those other diuretics which act by changes in osmotic or blood pressure (water, NaCl, digitalis) have no influence. Extra-

renal factors, as cause of variation, aside from errors in technique, are negligible. Diet, of course, is irrelevant. The tests may be given at any time of the day or night, irrespective of meals and fluid intake. Disease of other organs, except as it lowers kidney activity as a result of general debility, is without effect. There are no physiologically related organs, the drug being untouched except by the kidneys and the liver, and it has been shown that disease of the liver bears no relation whatever to the output (R. and G.). The drug is peculiarly, therefore, an evidence of renal activity. The renal factors that may influence phthalein, aside from renal disease, are fatigue, certain little understood states of hyperpermeability, and inhibition of work from nervous or other reflexes. *These factors can be best controlled by a repetition of the test.* To prevent inhibition, R. and G. recommend giving 400 to 600 ccm. of water just previous to the injection, which usually insures free function, but affects in no way the true function. The influence of these intrarenal factors is relatively small and may be disregarded in most cases.

The interpretation of the findings with phthalein, as with all other functional tests, must be controlled by clinical and other methods of examination. The time of appearance varies widely and has a questionable value, as it may be very misleading. It should be taken into account mainly for purposes of hourly collection. The total phthalein output has been found to show reduction proportional to the disease. It is reduced, except in the very early stages, in most forms of nephritis, acute or chronic, interstitial as well as parenchymatous. It is uninfluenced in cardiac conditions without renal involvement, and is an unusually good index of kidney disturbance from back pressure due to enlarged prostate, ureteral stone, or stricture. In general it may be said that a reduction in phthalein invariably means renal change, and a marked reduction, to a trace, is indicative of a grave prognosis irrespective of signs of uræmia. *The test is unequalled as an index of total function.*

*Value with ureteral catheterization.* The dye is commonly given intravenously for functional studies with ureteral catheterization. The appearance time varies from 2 to 8 minutes, and inasmuch as the dye reaches both kidneys at the same time and in equal amounts, the 15-minute or half-hour collections for both sides should start at the time of its first appearance on either side. The particular value of phthalein in unilateral disturbance is that it gives not only relative but absolute values on the two sides—a virtue that

is wanting in all other tests. The total one-half hour output after intravenous injection is about equal to an hour's output after the intralumbar, so that a "total phthalein" by intralumbar injection having been previously taken, it is possible to control the question of bilateral or unilateral inhibition following the catheterization. Leakage can be accurately determined by having the patient void or by passing a catheter at the end of the test. To insure a free flow of urine and to obviate inhibition, R. and G. advise giving water to the patient before the test, which in no way affects the phthalein. Aside from the occasional decrease by inhibition and the loss by leakage, the findings are reliable and accurate.

## PART II

### PRACTICAL APPLICATION OF FUNCTIONAL TESTS IN SURGERY

A just recognition of the limitations of functional studies, as a whole, logically precedes any critical interpretation of their relative values individually. The severest criticisms come from those least familiar with their use. It should never for a moment be forgotten that functional studies alone never make the diagnosis. The clinical and chemical, and cystoscopic and radiographic, the microscopical and bacteriological, and the other special methods of exploration and examination are quite as important in the diagnostic or prognostic chain. Functional tests no longer form a weak link, but they are a link only. Furthermore, a functional finding is only temporary and denotes nothing more than the functional ability at the very time of the test. It is a poor indication of what the kidney has been doing or is capable of doing. The possibility of future regeneration or disturbance of function is undetermined by it. There are partial exceptions, of course. An unusually low finding indicates renal insufficiency of more than the current moment, which indication is more pronounced with certain tests (blood urea) than with others (phthalein), but a complete record is impossible and can only be approached by frequently repeated tests. By means of such a series it is possible to delimit renal function into relative periods of statism or of variation, and by a study of the character of these periods much safer deductions can be made. The restoration of function following relief of back pressure from prostatic obstruction, or a fall of function due to ascending infection in the same condition of permeability, are instances of periods of variation, progressive, and regressive, whereas

the even findings in a case complicated with chronic nephritis exemplify a static period. In addition to these changes the excretory power of the kidneys is known to vary from time to time, and the question arises, Are the kidneys functioning at their minimum, average, or maximum capacity at the time of the test? The presence of fatigue (Schlayer), of temporary hyperpermeability (Baetjer), of reflex influences from irritation of the bladder (Evans, Wynne and Whipple) or from disturbances from the opposite kidney (Lichtenstein and Katz), and of nervous influences in general (Jungmann) all tend to modify the work performed by the kidneys and emphasize the importance of repeated tests.

Whereas it is true that the excretory power of the kidneys differs for different substances, this ability is largely a matter of degree, since the same general tendencies are common to them all, and, knowing the findings of one test, the behavior of the others can be roughly predicted. A familiarity with the relative significance of each test is necessary, but because of this close parallelism a proper selection of a very few tests will give all the essential information. A choice of the best test from the excretion and retention groups should give the sum total of the data possible from them all. Two tests, one in each group, seem to stand far and away ahead of all others in the simplicity of technique and in the reliability and completeness of the information furnished. These are phenolsulphonphthalein and blood urea (or nitrogen). The judicious use of these two will form the ideal routine for the surgeon. Occasionally, conditions arise in which some of the other methods may be of additional value, as sodium chloride and lactose or the estimation of acidosis in certain nephritics, indigo-carmin when catheterization is impossible, and urine-urea and polyuria in conjunction with phthalein in studying separate functions.

The estimation of surgical risk from renal insufficiency and the determination of the extent and character of unilateral and bilateral disturbances in so-called surgical diseases of the kidneys are the functional problems of the surgeon. These are solved by studying the combined function and the separate functions of the two kidneys.

*Combined function.* The phthalein test is ideal for the estimation of total function from an excretory standpoint. Where phthalein is low, however, it gives no indication of the extent of retention: in one case the outlook may still be favorable since the kidney is able to excrete waste products sufficiently to prevent accumulation;



but another case, with the same low phthalein, may have marked retention and be on the very verge of uræmia. Tests of retention (blood urea) are unnecessary in cases with a good phthalein, as, here, waste products are never retained, but they should be made in every case with a low phthalein, and these tests, phthalein and blood urea, should be frequently repeated to see whether the kidney condition is stationary, regressive, or progressive. The relative value of the two is distinct. In a study of experimental nephritis, Frothingham and co-workers concluded that they paralleled each other, generally, as indicators of renal function, but with this marked difference: "The amount of phthalein excreted shows the renal function for the moment; the amount of non-protein nitrogen and urea in the blood is rather a measure of an accumulating difference between the amounts of waste nitrogen produced in metabolism and the amounts eliminated by the kidneys." The waste products accumulate gradually in the blood and return to normal, gradually, as the kidney recovers. Agnew found the urea content of the blood to vary inversely as the excretion of phthalein in the urine, but not absolutely. Attempts have been made (Braasch, Thomas, and others) to place a definite figure of phthalein percentage (20 per cent) below which it is dangerous to operate, but most surgeons place most reliance upon the picture of repeated readings. Many cases with static phthalein below 10 per cent can be safely operated upon, while others with a relatively high phthalein which is gradually falling (40 per cent, 35 per cent, 30 per cent, etc.) are very poor risks. The general clinical picture is of great additional importance.

Consideration of total renal function from a surgical standpoint may be subdivided into medical diseases of the kidney, kidney disturbance due to obstruction in the lower genito-urinary tract and surgical diseases of the kidney. Medical diseases of the kidney are of chief importance to the surgeon from the standpoint of operative risk. The differentiation of tubular or glomerular types are irrelevant. The medical cases from this point of view are renal, cardiorenal, or cardiac with chronic passive congestion of the kidneys without nephritis. In the safe estimation and differentiation as to prognosis of these several medical conditions, functional tests, alone, are inadequate. The clinical picture and examination are also, alone, inadequate, and it is by a combination of clinical and functional studies frequently repeated that the relative responsibility of the kidneys and heart can be placed.

In the clinical absence of cardiac decompensation the degree of renal insufficiency, whether parenchymatous or interstitial, will be indicated by phthalein. In some mild cases, phthalein may be normal and lactose delayed which, in the absence of cardiac involvement, means an early vascular type of nephritis (Schlayer). Where there is cardiac involvement, however, an identical functional picture due to chronic passive congestion of the kidneys may be found. Phthalein is invariably decreased in advanced nephritis, and for prognosis as to surgical risk this one excretory test is quite sufficient, except when it is very low, below 10 per cent, when the prognosis is uncertain until the degree and character of retention have been determined. The prognosis is grave in every case with a low phthalein but becomes much more serious with evidence of retention.

In the case of cardiorenal disease the phthalein and blood urea with repetition of tests will indicate which of the two, heart or kidneys, is more responsible for the severe clinical symptoms. Good phthalein with normal blood urea points to the heart; low phthalein with nitrogen retention, to the kidneys. Improvement of phthalein along with restoration of cardiac compensation is favorable from a renal standpoint. Nitrogen retention never occurs in purely cardiac conditions and unless the chronic passive congestion of the kidneys becomes marked, phthalein output is not changed; lactose, however, is delayed.

In renal disturbance from obstruction in the lower genito-urinary tract study of total function is alone necessary, and what has already been written regarding medical diseases applies frequently here also; as these cases may be renal, cardiorenal, or cardiac. But urinary obstruction, with or without ascending infection, may be alone or largely responsible for the renal disturbance from the effects of back pressure without an associated chronic nephritis, and, with the relief of this back pressure many of these cases recover completely their renal capacity. The surgeon can determine the static, progressive, or regressive state under appropriate preliminary treatment, retention catheter, etc., and select a favorable time for operation. In these cases, *repeated* phthalein, with blood urea when necessary, give all the necessary information.

Surgical disease of the kidneys, unilateral or bilateral, requires study of both the combined and separate function and phthalein again is, unquestionably, of the greatest value for both. The total function determination tells whether the disease is bilateral, as in such case it will be

reduced. In unilateral disease the total function may also be somewhat reduced, because of secondary influences of the diseased side upon the healthy side, or the healthy side may not have sufficiently hypertrophied to take up the additional work. A small reduction in total function, therefore, is no absolute indication of bilateral disease, as the healthy side will regain complete function in time or upon removal of the checking influences. A total function has the additional value of control over the findings of the relative and absolute values with ureteral catheterization. It will readily demonstrate an error from unilateral inhibition which, unrecognized, would lead to very faulty conclusions. The correction of this error in technique, namely, inhibition, is the one thing wanting to make kidney diagnosis almost perfect. When inhibition occurs the functional study must often be repeated, necessitating a second ureteral catheterization with its consequent discomfort to the patient. A consideration of the total function together with urine-urea per cent and urinary pigments on the two sides will frequently clear the way and avoid the necessity of a repetition of the catheterization. In this connection the production of an experimental polyuria by giving water is most helpful, and the exceptional virtues of phthalein become apparent, because phthalein is little, if at all, affected by dilution. Leakage about one or both catheters is a second great source of error. Aside from the technical means of control by the use of large, Albarran flute-end or Garceau catheters, this error can be readily recognized by examining the bladder contents at the termination of the test, and this examination gives much more definite and absolute control with phthalein than with any other functional test. Where ureteral catheterization is impossible chromocystoscopy with indigo-carmin, or phthalein using an alkaline irrigating fluid in the bladder (Sehrt), is valuable as indicating the diseased or more diseased side, and with a previous total phthalein determination will often furnish the desired information.

It is folly for the surgeon to complicate surgical diagnosis by the use of a host of different tests when one or two will furnish all the facts. A review of all tests of excretion clearly denotes the phthalein technique as the simplest, the most accurate, and the most complete. As an indication of total function it is incomparable. Blood urea is the simplest, most definite, and most practical of tests of retention. With these two tests the surgeon has an accurate and ready means of controlling operative risk, and these

tests, properly *supplemented* in certain exceptional conditions, by one or more other methods, as indicated, and with the other newer means of kidney exploration and examination, place kidney surgery second to none in the accuracy of diagnosis and of the subsequent operative or other form of treatment.

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<sup>1</sup> The references are arranged, as far as possible, in alphabetical order under the test dealt with. Where the reference deals with functional tests in general it is placed alphabetically under the heading "general."



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# ABSTRACTS OF CURRENT LITERATURE

## GENERAL SURGERY

### SURGICAL TECHNIQUE

#### ANÆSTHETICS

**Zweifel, E.: Technique of Sacral Anæsthesia** (Zur Technik der Sakralanästhesie). *München. med. Wchnschr.*, 1914, lxi, 696.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author describes briefly his experience with sacral anæsthesia in 20 cases. He used for the injections the solution given by Lâwen: Sodium bicarb. 0.15, sodium chlorate 0.1, novocaine 0.6, dissolved in 30 ccm. of distilled water. In 17 of the 20 cases the operation was performed without pain. They were vaginal operations, such as colporrhaphy, plastic operations on the vagina and perineum, amputation of the cervix, anterior colpohysterotomy, operation for vesicovaginal fistula, etc. Of the remaining 3 cases there was complete failure in one, a ventrofixation of the uterus; and in the 2 others, an Alexander-Adams and a herniotomy, chloroform-ether had to be given. From his experience the author recommends deep extradural anæsthesia with 0.4 novocaine for vaginal operations such as those mentioned above.

HIRSCHEL.

**Legueu, F.: Local Anæsthesia in Prostatectomy** (L'anesthésie locale dans la prostatéctomie). *Bull. et mém. Soc. de chir. de Par.*, 1914, xl, 621.

By Journal de Chirurgie.

It is scarcely necessary to call attention to how much can be gained in this operation by the avoidance of general anæsthesia. Legueu has performed 15 operations successfully under local anæsthesia with a 0.5 per cent solution of novocaine with adrenalin added.

His technique is as follows: In anæsthetizing superficial layers he follows Reclus' technique. The bladder must be anæsthetized carefully, for the deep anæsthesia must be administered through the bladder incision. Therefore, it is necessary to inject 8 or 10 gr. of the solution into the bladder wall. Legueu generally places in the bladder cavity 10 or 20 ccm. of the anæsthetic solution mixed with distending fluid. After the bladder is opened two fingers of the left hand are introduced into it to explore the prostate. This exploration should be made carefully, as the prostate is still sensitive;

the finger can feel its sensitiveness decrease as the anæsthesia progresses.

To anæsthetize the prostate, Legueu makes 7 or 8 different injections in a crown-shape around it, giving 5 to 10 ccm. at each injection. He uses special needles constructed for the purpose. They are quite long, 30 cm., very resistant, and are made with different and special curves. To surround a large projecting lobe a large curve is necessary; for the anterior angles a short needle with a right angle is used. The successive injections must be made slowly, directing the point of the needle with the two fingers which are not removed from the bladder throughout the anæsthesia. When the needle strikes the adenoma the assistant who is pushing the piston feels great resistance; then the position of the needle must be changed. When it is properly located the liquid penetrates very easily. When all the periphery of the prostate is anæsthetized, two injections are made into the intraprostatic urethra. Shortly after the completion of the injections, enucleation can be performed without the patient feeling it. Legueu uses 60 to 70 gr. of the solution for the bladder and 60 to 70 gr. for the prostate. The operation which formerly took half an hour is now reduced to 15 minutes: 12 or 13 for the anæsthesia of the bladder and 3 for the enucleation, tamponing, and placing of the tube.

J. DUMONT.

#### SURGICAL INSTRUMENTS AND APPARATUS

**Ayres, W.: An Instrument for Direct Application of Radium to Neoplasms of the Bladder.** *N. Y. M. J.*, 1914, c, 126. By Surg., Gynec. & Obst.

The author's instrument consists of a radium carrier within a gold capsule for screening the secondary rays. To this is welded a long silver wire, which may be used through an operating cystoscope, so that the radium container is held against the tumor under direct observation. The author recommends these applications for one hour, three times a week. In order to lessen the irritation, he injects two ounces of a one per cent solution of alypin into the bladder, one-half hour before the introduction of the cystoscope, and, during the treatment, the bladder is kept full of a one to four hundred per cent alypin solution.

HARRY KRAUS.

**Sanfords, C. H., and Fitz-Simmons, H.: A Combined Fracture and Orthopedic Operating Table.** *N. Y. M. J.*, 1914, c, 74.

By Surg., Gynec. & Obst.

The author presents a detailed description with drawings of an ingenious table devised to facilitate the reduction of congenital dislocations of the hip.

The advantages claimed for it are: (1) simplicity of construction; (2) absolute fixation of the pelvis; constant traction is obtainable and is absolutely under the surgeon's control; pressure at the trochanter is obtainable as desired and at the same time permits an efficient plaster to be applied with the hip reduced and held in position. R. B. COFIELD.

## SURGERY OF THE HEAD AND NECK

### HEAD

**Frangenheim, P.: Fibrous Ostitis of the Skull** (*Die Ostitis fibrosa des Schädels*). *Beitr. z. klin. Chir.*, 1914, xc, 117.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Paget's ostitis deformans and von Recklinghausen's ostitis fibrosa are both observed in the skull and are sometimes classified under leontiasis ossea. The two processes are very similar to each other in pathological anatomy, but the clinical pictures are clearly distinct. Ostitis fibrosa or osteodystrophia cystica juvenilis is a disease of youth, while ostitis or osteomalacia chronica deformans is a disease of adults.

The literature contains 4 cases of ostitis fibrosa of the skull, to which the author adds a case of his own. The location of choice is in all cases the temporal bone, with or without involvement of the surrounding bones—the roof of the orbit, the frontal, zygomatic, and parietal bones.

The beginning of the disease in all the patients was in the first decade of life; except in one case a trauma was given as the cause. It is manifested by a flat swelling, not very sharply circumscribed, and of bony consistency; in the röntgen picture it shows a shadow that is sometimes irregular and jagged, sometimes sharply circumscribed, and is dotted with clearer spots and has a zone of sclerotic bone around it. The symptoms consist of dragging pain in the head, varying in extent, and generally gradually increasing in intensity, and sometimes there are visual disturbances. There are no brain symptoms, as the projection of the bone is outward.

Histological examination shows that the primary lesion is fibrosis of the bone-marrow, which leads to destruction of bone and secondarily to cyst formation. The fibrous marrow, however, still possesses osteogenetic properties, as is shown by the abundant production of osteoid tissue. The treatment is operative, and often requires extensive resection and, later, plastic replacement. Attempts should be made in all cases to avoid general disease of the skeleton, and this can be accomplished even in cases where radical removal of all the diseased bone is not possible, for often an incomplete operation puts a stop to the process even if it does not bring about complete recovery. Four further cases from the

literature are described that should probably be classified as ostitis fibrosa.

A characteristic point in the history of ostitis deformans of the skull is that the circumference of the skull gradually increases, so that a larger size of hat must be worn from time to time. The changes in the skull dominate the clinical picture. The broad and prominent forehead looks enormous, especially as it is generally accompanied by baldness; the temporal fossæ are filled out and generally bulging, the parietal bones are broad and protruding. There is no change, or at most only a slight widening out of the back part of the head. The base of the skull is seldom involved. The lower and upper jaws are hypertrophied only in rare cases. There is no headache, in some patients the skull bones are sensitive to pressure. The röntgen picture shows that there is thickening of the bones of the skull and shadows of different depths; there are islands poor in calcium in the bone.

In contrast with leontiasis ossea, ostitis deformans is characterized by the smoothness of the bones of the skull and their impenetrability even by hard röntgen rays. In leontiasis ossea there are irregular protuberances on the skull bones. The cases that are described under this name are quite variable. The one thing that appears to be common to all of them is that the disease begins at puberty. Almost all the patients died in the third or fourth decade. In only one case, which is not thoroughly authentic, there was a cessation, and perhaps even a retrogression, in the disease. In the cases recognized as true leontiasis ossea there is no basis in the somewhat defective case histories for assuming an identity of these cases with ostitis fibrosa or ostitis deformans. True tumor formations have also been classified under leontiasis. From this it can be seen that at least four diseases have been described under this name: (1) ostitis fibrosa (von Recklinghausen); (2) ostitis deformans (Paget); (3) diffuse hyperostoses of the bones of the skull and face (Virchow); (4) symmetrical family hyperostoses of the jaw (Frangenheim). The two first are independent diseases and the fourth cannot properly be described as leontiasis ossea, because the marked disfigurement of the face that gives it a lion-like expression is not present in it. GENEWEIN.



## NECK

**Hamilton, A. S.: Cervical Ribs as a Cause of Brachial Neuritis.** *J.-Lancet*, 1914, xxxiv, 321.

By Surg., Gynec. & Obst.

A cervical rib is a developmental anomaly, and consists in the abnormal development of a nodule which, embryologically, can be seen on the anterior surface of the transverse processes of all the vertebrae. This development occurs most often from the seventh cervical vertebra. In a large proportion of cases it is bilateral, but usually one rib is better developed than the other. Females are more often affected — 31 to 11.

Gruber has classified the size of the ribs as follows: First degree, a slight increase of the costal process; second degree, a rib protruding beyond the transverse process to a moderate extent and ending in free tissue or attached to some part of the first thoracic rib; third degree, a rib extending to a cartilage of the first thoracic rib, possesses a complete body, and is united directly or by means of a ligament; fourth degree, a complete cervical rib united to the manubrium sterni.

When the rib, however, is well developed it forces the brachial plexus and subclavian artery high up in the neck and may cause the following symptoms: (1) arterial, (2) vasomotor, (3) sensory, and (4) motor.

If the rib be 5 or 6 cm. or more long it may cause pressure on the artery resulting in temporary pallor or, in extreme cases, causing complete obstruction and resulting gangrene as reported in the author's case. The vasomotor disturbances, such as cyanosis, pallor, coldness, and sudden oedema, are due to a sympathetic group of fibers from the second thoracic. (Cunningham).

Sensory symptoms are either subjective or objective. The former are those of pain from the shoulder to the hand, the pain becoming more severe on exercising. This pain is usually most severe over the distribution of the eighth cervical and first thoracic nerves. Touch is less involved than pain.

Motor symptoms are present in a good many cases, often confined to the abductor, aponeurosis, and flexor brevis pollicis. Atrophy of the flexors of the fingers and hand may cause a distinct claw-hand.

In the differential diagnosis of cervical ribs, rheumatism, alcoholism, syphilis, deficient blood-supply, climacteric, and senility should all be considered. In conclusion, the author argues that every case of persistent brachial neuritis be subjected to X-ray examination for cervical ribs.

EUGENE CARY.

**Law, A. A.: The Surgical Aspect of Cervical Ribs.** *J.-Lancet*, 1914, xxxiv, 330.

By Surg., Gynec. & Obst.

Law briefly summarizes the symptoms and diagnosis of cervical ribs, and discusses, in detail, the operation he has found most useful in this condition.

At the end he reports two cases, one of which he says is unique because it is the only case reported where both cervical ribs were removed.

His operation is as follows: A vertical incision paralleling the border of the scalenus medius is first made. Next the scalenus anticus muscle should be dissected out and severed, care being taken not to cut the phrenic nerve which lies on its inner aspect. The subclavian artery and lower brachial plexus are freed by blunt dissection, the artery being retracted downward and the nerves upward. This exposes the rib, which may be cut away with bone forceps; the dome of the pleura is separated from its inner aspect and the intercostal muscles cut. McKenna advocates taking a small muscle-flap from the scalenus medius and bringing it under the artery and nerves over the first rib, in order to make a cushion to protect them from the roughened bone.

EUGENE CARY.

**Marañón, G.: Hyperchlorhydria and Hyperthyroidism** (Hyperchlorhydrie et hyperthyroïdisme).

*Rev. de méd.*, 1914, xxxiv, 161.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Among the great number of functional disturbances of the stomach there is a group caused by disturbances of the glands of internal secretion; hyperchlorhydria and hypersecretion especially are often the result of hyperfunction of the thyroid gland and associated with it. The manifestations of hyperthyroidism are manifold; two forms are to be distinguished, the sympatheticotonic, with stimulation of the vegetative nervous system, and the vagotonic, with stimulation of the autonomous system. The former corresponds to typical Basedow's disease; the latter shows no goiter, no exophthalmos, no tachycardia, but subjective heart symptoms, severe sweat, diarrhoea, disturbance of the respiratory rhythm, and stomach symptoms with hyperchlorhydria.

A series of cases carefully examined by the author confirm this theory; the first three cases had severe stomach symptoms without the cause of the hyperchlorhydria being suspected; extirpation of the thyroid caused recovery. In another case the hyperthyroidism recovered spontaneously and the stomach symptoms then disappeared. Five cases were cured by rest, milk diet, and quinine. In cases 6 and 7 the symptoms disappeared promptly on the administration of antithyroid serum; case 8 was not affected by this, nor were cases 10 and 11 affected by atropine.

Among 53 cases of hyperthyroidism that the author observed there were stomach symptoms in 30 per cent, due to hyperchlorhydria, except in one case, in which the patient was undergoing the menopause and had a neoplasm of the stomach. The literature gives vague or contradictory reports, due to the fact that it classifies most typical Basedow cases with constitutional asthenia, in which the achylia cannot be attributed to the hyperthyroid-



ism. In the author's cases the hyperthyroidism was of the vagotonic type, and hyperchlorhydria is the rule in these cases; it disappears when the hyperthyroidism is cured either spontaneously or as the result of treatment. The administration of large quantities of thyroidine also leads to stomach disturbances with hyperchlorhydria by stimulation of the vagus; the stimulation of the vagus, according to Pawlow and Gaglio, causes an increase in the secretion of gastric juice.

In the vagotonic cases there is hyperacidity and hypersecretion, sometimes without symptoms, often with pain, and, on the other hand, in hyperacidity there is vagotonus — marked reaction to pilocarpine and atropine. A young man had hyperchlorhydria and ulcer; after recovery the injection of 1 cg. pilocarpine caused extreme vagotonic reaction and severe stomach symptoms, vomiting, and increased acidity.

Vagotonus seldom occurs alone; it is generally accompanied by disturbances of internal secretion, especially of the thyroid gland. The typical stomach disturbance in vagotonic hyperthyroidism is hyperchlorhydria; on the other hand, achylia is found with insufficiency of the thyroid. However, in the latter there is often hyperchlorhydria also, in which case the paradoxical situation is seen of its disappearing on the administration of thyroid substance. In hyperthyroidism the existence of hyperchlorhydria is an indication for energetic antithyroid treatment (atropine, operation), and in nervous hypersecretion and hyperacidity, examination should be made for vagotonus and hyperthyroidism.

STREISSLER.

**Farrant, R.: The Causation, Prevention, and Cure of Goiter, Endemic and Exophthalmic.** *Brit. M. J.*, 1914, ii, 107. By Surg., Gynec. & Obst.

The object of Farrant's paper is to record observations on 85 cases of goiter, exclusive of simple hyperthyroidism, as to the relationship between toxæmias and diseases of the thyroid; to prove that in cases in which the thyroid is diseased the causatory microorganism or toxæmia can be determined; to show that in this way diseases of the thyroid can not only be cured but also prevented.

The writer brings forward strong clinical and experimental evidence warranting the following conclusions:

Exophthalmic goiter is due to a combination of toxæmias of an intensity sufficient to cause a hyperplasia with absorption of the colloid material. The primary seat of infection is usually the mouth (pyorrhœa alveolaris), nose, and sinuses, or the lung. Some of the common microorganisms found in infections of these parts, such as the streptococcus, staphylococcus, and pneumococcus, have no effect upon the thyroid. Bacillus catarrhalis, and bacillus tuberculosis, on the other hand, can cause a complete hyperplasia, as found by inoculation of guinea pigs. A nervous shock may lead to the diagnosis of exophthalmic goiter by suddenly

bringing into evidence the symptoms of hyperthyroidism.

Exophthalmic goiter can be prevented by the detection of the early cases of hyperthyroidism and the subsequent removal of the causatory toxæmia. Exophthalmic goiter can be cured if the causatory agents be removed before degeneration has occurred, either in the gland, or in those organs that are affected by the hypersecretion. When degeneration has taken place in the thyroid, removal of the toxæmias causes involution to take place only in the hypertrophied portion; the adenomata and cysts are left. These require appropriate surgical treatment, as they to a certain extent keep up the symptoms of thyroid excess. Surgical treatment without removal of the cause is followed by recurrence unless so much of the gland substance has been removed that hypersecretion is impossible.

Endemic goiter is caused by the toxins from the atypical forms of bacillus coli. The mutants are usually conveyed by water. They become indigenous in the intestine, and different mutants of the bacillus coli are to be found in the fæces in cases of endemic goiter, while they are but rarely present in the fæces of non-goitrous individuals. The mutants set up an apyrexial toxæmia, which stimulates the thyroid, thus leading to a colloid hyperplasia and, eventually, to enlargement of the gland. The whole process can be imitated in laboratory experiments on guinea pigs. Endemic goiter is preventable by the avoidance of water contamination and by the sterilization of contaminated water. It can be cured by the administration of intestinal antiseptics; the gland returns to normal providing no degeneration has taken place. The gland as a whole involutes to normal, but the adenomata and cysts are left.

ROBERT H. IVY.

**Buford, A. G.: Simple Goiter, a Compensatory Hypertrophy; Its Symptoms and Relation to Other Clinical Types.** *Illinois M. J.*, 1914, xxvi, 7. By Surg., Gynec. & Obst.

Buford states that no matter what complex features may present themselves microscopically in goiters, glandular hypertrophy is present in some part of the sections. For this reason he believes that simple goiters should be classed as toxic and atoxic.

He believes that all goiters not associated with neoplasms have their beginning as compensatory hypertrophies; that the appearance of the goiter depends on the stage and character of the pathogenesis and that the constitutional symptoms appear in proportion to the need of thyroid secretion; also most simple goiters are cured by thyroid feeding.

The symptoms associated with simple goiter are: The thyroid is enlarged, either locally, or there is a diffuse enlargement. Nodularity is usually due to some pathological change, as colloid accumulations, adenomatous or fibroid changes.

The constitutional symptoms are most important. The child or adolescent is usually below the standard of health and development. Younger children usu-



ally have a weak voice, frail stature, muddy and pimpled skin, poor muscular tone, and drooping posture; or clear skin and flushed cheeks, and rapid and regular pulse—72 to 120.

The blood-pressure is low and the vasomotor tone pure, but the hæmoglobin is usually high—78 to 90 or 100. The disease, therefore, has no relation to chlorosis. Pronounced albuminuria with casts may be present. Signs of malnutrition and great exhaustion are prominent.

The treatment consists in supplying the patient with thyroid substance. At first 0.5 to 3 grains of the dessicated extract every 12 hours; after a few days the dose is taken every 6 hours. After the patient's tolerance is gauged  $\frac{1}{8}$  to 1 grain doses are given every one to one and one-half hours. The dose is stopped or diminished whenever hyperthyroidism is induced. The dose should be gauged by the increased pulse rate, induced tremor, and composed or anxious appearance.

Improvement is estimated by the gain in strength and endurance and by the diminution in pulse rate.

The author believes that children and adolescents are helped over certain periods of development after which the thyroid becomes competent. He discourages operative procedures for these simple goiters.

EUGENE CARY.

**Pettavel, C. A.: Pathological Anatomy of Basedow's Disease** (Weiterer Beitrag zur pathologischen Anatomie des Morbus Basedowii). *Mitt. a. d. Grenzgeb. d. Med. u. Chir.*, 1914, xxvii, 694.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author reports 8 cases (6 of them in women) of severe Basedow's disease, 3 of whom died after the operation and 5 of intercurrent diseases. A study of the detailed reports of the examinations gives the following results: Thyroid, one parenchymatous and one colloid goiter. There were always undoubted signs of proliferation of the parenchyma and thinning of the colloid. There were

polymorphous vesicles, desquamation, formation of papillæ; in the stroma there were lymphocytes and plasma-cells. In the thymus twice there was involution. The weights in the other cases were 31, 50, 23, 25, and 110 gm. There was not only persistence but mixed hyperplasia. The eosinophile cells showed variations. The adrenals were small and hypoplastic except in the two cases with small thymus. There is therefore an antagonism between the two organs. The large size of the center of the medullary portion of the adrenals, on the other hand, indicated a capacity for increased work. Status lymphaticus was found in five cases. Especially noteworthy is the finding of lymph-follicles with a germinal center in the medullary portion of one case. The ovaries showed atrophy, macroscopically.

As to the relation between Basedow's disease and hypertrophy of the thymus the author gives the following conclusions based on his own 11 cases: Hyperplasia is lacking in 25 per cent of the cases. Therefore it cannot be said that hypertrophy of the thymus is a constant symptom in Basedow's disease, in contrast with the histological changes which are regularly found in the thyroid. The hyperplasia of the lymphocytic part of the thymus rests on the same basis as that of the rest of the lymphatic system and is to be regarded as the result of the irritation from the secretion of the diseased thyroid.

The thyroid increases the activity of the chromaffin system; the thymus inhibits it. It seems possible that after the hemi-excision of the thyroid the inhibitory action of the thymus prevails to such an extent that the deaths which sometimes follow the operation are due to a secondary stoppage of the function of the adrenals. This theory is in accord with the good results that follow when the thymus is also excised. The very frequent lymphocytosis in Basedow's disease is not a symptom of a status lymphaticus, but is of thyroid origin. **HOTZ.**

## SURGERY OF THE CHEST

### CHEST WALL AND BREAST

**Greenough, R. D., and Simmons, C. C.: Results of Conservative Treatment of Cystic Disease of the Breast.** *Ann. Surg.*, Phila., 1914, lx, 42.

By Surg., Gynec. & Obst.

Under this title the authors include cases in which "a diffuse process involves a large part if not the whole of the breast, or of both breasts," and in which there is an "increase in the interlobular connective tissue and dilatation of the gland ducts into macroscopic microscopic cysts."

Eighty-three cases form the basis of this paper: 62 cases are alive and well; 13 cases showed sooner or later a return of the disease; 4 cases developed

carcinoma of the breast after partial operation for cystic disease of the breast.

The authors conclusions are:

1. Partial operations should not be attempted for widespread cystic disease of the breast.

2. Exploratory removal of a nodule, suspected of being carcinoma, by local excision is dangerous; the safest procedure is removal of the entire breast, with the pectoral fascia.

Carcinoma occurs in 10 per cent of cases of cystic disease of the breast. The operation of local excision or partial plastic resection should be restricted to the earliest and mildest types of cystic disease. A review of the 83 cases is appended.

ISIDORE COHN.

**Krause, P.: Treatment of Carcinoma of the Breast with Röntgen Rays** (Über die Behandlung der Mammacarcinome mit Röntgenstrahlen). *Sub.-Kong. d. deutsche Röntgen-Ges.*, Berl., 1914.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Krause believes that operable cases should be operated on; he sees no advantage in preceding operation by röntgen treatment, but on the contrary believes the loss of time involves certain dangers, such as metastases in glands. Operation, as well as röntgen treatment, is a local treatment that cannot influence the general disease. Therefore in operable cases the immediate removal of the tumor by operation is the more rational procedure; in recurrences, where a large lymphatic region is involved, röntgen treatment is more rational.

Operable cases that have to be treated by radiotherapy because the patient refuses operation, give chances of success only when the tumor is small and the patient not obese. Inoperable cases generally give a bad prognosis; only the ulcerous forms are more favorable. Röntgen treatment of recurrences gives good prospects so long as cachexia has not begun and the dissemination is not very extensive. The treatment must be continued systematically for a long time. Prophylactic radiotherapy after operation is very earnestly to be recommended, and here too it must be systematic; the whole of the thorax and neck must be irradiated. An anterior and posterior region for irradiation should be chosen on each side. Prophylactic treatments should be given in a series each month and, on an average, continued for a year.

SELBSTBERICHT.

**Torek, F.: Interpleural Pneumolysis, an Operative Procedure in Pulmonary Tuberculosis.** *Surg., Gynec. & Obst.*, 1914, xix, 1.

By Surg., Gynec. & Obst.

The value of the pneumothorax treatment as an aid in combating tuberculosis of the lungs is pretty generally acknowledged. In many advanced cases, however, the pleural cavity is practically if not completely obliterated by adhesions, so that it is impossible to inject the nitrogen. In other cases, where only a limited portion of the pleural cavity is free from adhesions, the collapse of the lung produced by the injection of nitrogen will be too slight to be of much value, as the cavities in the lungs would fail to be obliterated or would collapse to a limited degree only.

In these cases extensive removal of the ribs on the affected side from the first or second to the tenth or eleventh has been done to bring about the desired collapse of the lung. This operation, when performed in advanced cases, has a rather high death rate, a number of the deaths being due to insufficient oxygenation of the blood, a result of instability of the mediastinum, owing to the lack of support on that side of the chest from which the ribs were removed. The mediastinum is drawn to the unoperated side on inspiration and forced toward the operated side on expiration. In consequence the lung on the operated side is neither satis-

factorily expanded on inspiration nor properly emptied on expiration.

Torek's operation accomplishes the desired collapse of the lung by an operation which is not only simpler of performance but also preserves the bony frame of the chest. It consists in separating the adhesions between the visceral pleura. Anæsthesia is conducted by intratracheal insufflation. An incision about six inches long is made in the sixth or seventh intercostal space at the posterolateral aspect of the chest down to the pleura, and after all hæmorrhage has been stopped the pleura is divided. The patient is now placed with the head low, so that the contents of a cavity may run into the mouth and not into the opposite lung. The adhesions in the immediate vicinity of the incision are first separated with the tip of a finger, the ribs being held apart. The separation proceeds further, until finally the whole hand is introduced to liberate the more distant parts of the lung. Care must be taken not to injure the wall of a lung cavity, as, owing to a valvelike action at the site of the tear, the inspired air would enter the pleura more easily than it could get out and a subcutaneous emphysema would result. The probability of an infection of the pleura would also exist. When the separation of adhesions has been completed, the lung will collapse, and it is not to be reinflated before closing the thorax. The two ribs which had been spread apart are approximated by pericostal sutures of silk or chromicized catgut, after which the muscles and skin are sutured.

A case, described by the author, had an affection of the entire left lung and of the upper and middle lobes of the right lung. In the left lung there was a large cavity. At the operation the wall of the cavity was injured and an emphysema resulted; later also an infection of the pleura, which was then drained. The important points in the history are the following: The patient, who was an absolutely hopeless case, bore the operation itself well; secondly, there was a marked diminution of the cough after the third day; thirdly, the temperature, which had been high, dropped almost to the normal by the end of the first week; fourthly, an X-ray picture taken nine days after the operation showed that the lung cavity had disappeared; finally, there was also a subjective improvement. The patient did well until the fifth week, when diarrhœa set in, causing death.

The operation of interpleural pneumolysis is to be considered in cases where the ordinary pneumothorax treatment would be indicated, where, however, the extent of the adhesions either renders that treatment impossible or permits but an imperfect collapse of the lung. In cases of bronchiectasis similar indications would hold good.

**Fenoglietto, E.: Thoracocentesis without Aspiration** (Toracentesi senza aspirazione). *Riv. crit. di clin. med.*, 1914, xv, 129.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

This article gives a historical review of the methods of emptying pleural effusions. The appre-



hension of the entrance of air has led to the use of different kinds of apparatus for aspiration and, lately, to the insufflation of purified gases. The latter procedure has been heralded as affording the possibility of completely evacuating collections of fluid at one sitting without variations in pressure, hindering the return of the exudate and formation of adhesions, and protecting the lungs against tuberculosis.

It is the aim of the author to show that the puncture of the thorax with the ordinary trocar, as has recently been recommended by the Japanese Kawahara, is not only the simplest method but offers the same advantages by allowing the unhindered entrance of ordinary atmospheric air into the pleural cavity. In a period of 6 years 207 cases of exudative pleuritis with different causes, but mostly serofibrous in character, were treated by this method; the great majority of them (183) only had to be punctured once, the rest several times. A marked contrast with the aspiration method was in the shortening of the duration of treatment. Transformation of the serous effusion into empyema was observed in three cases, but these had originally been very rich in corpuscles and also contained pneumococci, so that the author does not believe that the puncture was responsible for it.

The antitubercular effect of the pneumothorax is not of great importance, for it lasts too short a time; also the prevention of adhesions seems, on the same ground, to be purely theoretical in nature. But from his experience with the "Japanese" thoracocentesis the author finds (1) that it is to be recommended for its simplicity and that it has destroyed all fear of the entrance of air into the pleural cavity; (2) that neither the age of the patient nor the amount or kind of the effusion are any contra-indication to the use of the method; (3) that accidents due to sudden decompression are excluded, and that great quantities of fluid can be evacuated at one time, generally with a fall of temperature by crisis and with a shortening of the duration of treatment, so that the method is especially suitable for cases of acute febrile pleurisy.

FIEBER.

**Dunlop, H. G. M.: Empyema in Children.** *Edinb. M. J.*, 1914, xiii, 4. By Surg., Gynec. & Obst.

A number of definite observations and conclusions are given, based upon a study of 98 cases of empyema in the Sick Children's Hospital. Pleural effusion occurred once to every 9 cases of pneumonia and showed a marked tendency to purulency the younger the child. In 59 cases under three years 53 were purulent, with a doubt as to some of the remaining 6 cases. After the age of ten the proclivity towards purely serous effusion is well established. Analysis of the fluid in 98 cases showed:

- In 53 cases — pneumococcus alone.
- In 16 cases — streptococcus alone.
- In 14 cases — pneumococcus and streptococcus.
- In 3 cases — staphylococcus alone.
- In 1 case — staphylococcus and pneumococcus.

In 2 cases — staphylococcus, streptococcus, and pneumococcus.

In 3 cases — tubercle bacilli alone.

In 6 cases — no growths.

Most cases are secondary, many complicating lobar pneumonia, 69 per cent in this series, and much less frequently are found as an aftermath of bronchopneumonia. In contrast with adults the condition is seldom due to the tubercle bacilli.

The onset may be acute, often with a convulsion occurring during the course of the primary disease, or it may be very insidious. Many cases enter the hospital under the diagnosis of atrophy, miliary tuberculosis, or congenital syphilis. In the symptomatology stress is laid on the very sick, pinched, and anæmic appearance of the child, which changes to an earthy color as the rapid emaciation characteristic of the condition ensues. There is usually some cough and dyspnoea, though the latter may be very slight even in the presence of massive effusion. In most cases there is a rise of temperature of four or five degrees, but in very weak and emaciated infants it may be absent. There is generally a leukocytosis of 20,000 to 30,000. The skin is usually dry and harsh and after a time the fingers tend to have a club-shaped appearance.

The observation of others as to the presence in many cases of tubular breathing over large effusions in children is confirmed. The displacement of the heart and the presence of a tympanic area over a resistant flatness extending to the base of the lung are held very valuable diagnostic signs. Purulent pericarditis was by far the commonest complication and is to be suspected when improvement fails to take place following drainage. In differentiation from serous pleurisy and other pathological conditions of the chest the needle should be unhesitatingly employed. The author's mortality was 19 per cent, and he especially emphasizes the grave prognosis under two years of age.

Evacuation of the pus should be performed on diagnosis. Incision of the pleura in the sixth midaxillary interspace is favored instead of the more radical resection of a rib. In a small percentage of cases this will not suffice, for drainage and resection must be done. Incision, as an operation, is simple and the attendant shock is slight. These considerations are of vital importance for the recovery of the child. Previous aspiration should always be performed both for confirmation of diagnosis and lessening the shock created by a large sudden evacuation from the pleural cavity. As a routine method of effecting cure it is only occasionally adequate, and dependence on it is fraught with great danger.

EUGENE J. O'NEILL.

**Pribram, E. E.: Treatment of Pleural Empyema and Abscesses of the Lungs** (*Die Therapie der Pleuräempyeme und Lungenabscesse*). *Arch. f. klin. Chir.*, 1914, ciii, 871.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The methods of treatment used at the von Eiselsberg clinic for the past thirteen years and their



results in 100 cases of pleural empyema or lung abscess are discussed. A short historical review gives the changes in the treatment of purulent processes in the lungs and pleura during these years (Bulau, Simon, Perthes, Schede, Delorme, and others).

Of 60 male patients 23, 38.4 per cent, were cured; 16, 26.6 per cent, improved; 20, 33.3 per cent, died, and 1, 1.7 per cent, were discharged unimproved. Of 40 female patients 21, 52.5 per cent, were cured; 11, 27.5 per cent, died; 7, 17.7 per cent, improved; and 1, 2.5 per cent, was discharged unimproved. The more favorable results in the females are explained, in part, by the fact that some of the men came to the hospital in very bad condition.

From the purely bacteriological standpoint the author adopts von Hockeneck's classification. Empyema in children is generally metapneumonic in nature and mild in course. Of 20 children under 14, 11 recovered completely and 3 were markedly improved. Of 23 metapneumonic cases 19 were discharged cured and only 3 died.

The prognosis of tubercular empyema in young individuals with only slight involvement of the lungs is very good as to life; but it takes a long time for their recovery. Heliotherapy in one case was a valuable supplement to surgical treatment. Five cases of streptococcus empyema ran a favorable course, two of them after scarlet fever. Four cases of inflammation of the pleura appeared after abdominal diseases, 3 of them being fatal; one each after liver abscess, perinephritic abscess, and subphrenic abscess. Secondary empyemas, which were a part of a general sepsis, were almost always fatal. Some inflammations of the lungs, without the coexistence of pleural empyema, showed a not unfavorable prognosis when operated on at the right time. Among 8 cases 5 were cured, 1 improved, and 2 died. The course is more severe when there has been a rupture into the pleural cavity. It is important to operate as early as possible while the general condition is yet good. Exploratory puncture and röntgen illumination are important aids in diagnosis.

In treatment the author recommends resection of the sixth, seventh, and eighth or more ribs and a small opening of the pleura—which is afterward enlarged—for slow evacuation of the pus. In lung abscesses, when there are no adhesions, the lungs should be sutured to the thoracic wall, or if this is not possible the pleural cavity should be tamponed before opening. The use of hyperpressure is to be recommended. The cavity should later be irrigated with a 3 per cent boric acid solution. Bülau's method is to be recommended only in mild metapneumonic empyemas or as an emergency operation. Accurate suture and air-tight closure of the wound are sufficient for after-treatment; Perthes' apparatus is only rarely used. In the treatment of chronic empyema Schede's thoracoplastic operation is of value. This operation may be performed under local anæsthesia; in sensitive patients a few drops

of ether may be given. One hundred case histories are given in conclusion.

NAEGELI.

**Bernard, C. E.: Hypertrophy of the Thymus.** (L'hypertrophie du thymus). *Thèses de doct., d'Alger*, 1913.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The case on which this work is based shows that radioscopy is not only important but almost indispensable in the diagnosis of hypertrophy of the thymus. The first symptom is spasm of the larynx caused by irritation of the recurrent laryngeal; later there is compression of the trachea. Attention is called to the development of a collateral circulation in the thorax through stasis in the vena azygos and superior vena cava.

The treatment is either purely surgical or radiological. Thymectomy stands first on account of the harmlessness of the operation and the good results from it. The strictest asepsis is very important in this operation. Drainage should not be established and preceding tracheotomy should be avoided. The only danger in the operation is the possibility of mediastinitis. In the author's case, thymectomy, which had been preceded by tracheotomy, was followed by purulent mediastinitis. The patient recovered.

The danger of drainage lies in leaving the wound open. In all cases where thymectomy alone is performed, without drainage, without tracheotomy, without removal of diseased glands, without sternocostal resection, and with strict asepsis, recovery is rapid and complete. Recently irradiation has been used as a supplement to surgical treatment. Injuries to the skin should be very carefully avoided. The duration of treatment varies from three weeks to two months, the doses from 9 to 20 H.

FRTZ LOEB.

**Klose, H.: The Thymus Gland and Rickets** (Thymusdrüse und Rachitis). *Zentralbl. f. allg. path. u. path. Anat.*, 1914, xxv, 1.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Some attempted explanations of rickets consider only toxins affecting the osseous system; others assume that the cause lies in a disturbance of calcium metabolism. Both explanations are wrong. Rickets is found most frequently in the months in which the chief activity of the thymus gland occurs.

Basch was the first to discover, in 1903, that after thymectomy in dogs there were changes in the skeleton that corresponded to those of spontaneous rickets in dogs. Matti, in 1912, identified the changes in the bones of thymectomized dogs morphologically with those of rickets, but did not draw any conclusions as to identity in etiology.

The latest research of the author justifies the conclusion that a surgical thymectomy, performed at the right time on suitable animals, produces in the skeleton of species of animals that are practically free from spontaneous rickets a disease which in



all respects shows the findings typical of human rickets. Dogs, pigs, goats, chickens, and rats were used as experimental animals. The experiments on the latter are of special importance, for Morpurgo succeeded in producing on rats a typical rickets by inoculation with diplococci obtained from a case of endemic osteomalacia. Here the nodules at the juncture of the costal cartilages and ribs, which are characteristic of severe cases of human rickets, appeared. The microscopical findings were also typical. It will take further research to show what rôle disease of the thymus plays in the production of rickets, but a study of the thymus as well as of the epithelial bodies should not be neglected.

STREISSLER.

### TRACHEA AND LUNGS

**Meyer, W.: On Bronchiectasis.** *Ann. Surg.*, Phila., 1914, lx, 7.  
By Surg., Gynec. & Obst.

The author gives a summary of the etiology, pathology, diagnosis, and treatment of bronchiectasis. The author's opinion of the present status of surgical treatment for this disease is expressed in his closing paragraph:

"If a patient comes to a surgeon to-day with a well-developed diffuse bronchiectasis and asks for relief, he should be told that at the present moment we have two operative methods of treatment at our disposal. The one entailing comparatively little risk, and to be done in stages, will change the anatomical structure of the lung and make it collapse, but in all probability will only improve the trouble to a greater or less extent; while the other one, consisting in the extirpation of the diseased lobe or lobes of the lung, if successful may cure but is still a dangerous procedure. The patient or his guardian must decide which course should be followed. It is to be expected that the majority will select the first procedure. Pneumectomy, then, always remains as a last resort, should the less serious operation fail to bring sufficient relief."

BARNEY BROOKS.

**Mumford, I. G., and Robinson, S.: The Surgical Aspects of Bronchiectasis.** *Ann. Surg.*, Phila., 1914, lx, 29.  
By Surg., Gynec. & Obst.

The paper is based on the study of twenty cases of bronchiectasis. The authors' conclusions are as follows:

1. Granted that bronchiectasis is commonly the result of bronchial obstruction by foreign body, tumor, or disease, the first indication in therapy should be the removal, if possible, of this obstruction. Bronchoscopy for the removal of a foreign body has not infrequently arrested bronchiectasis.

2. In the earlier stages of bronchiectasis, nitrogen gas injection producing artificial pneumothorax is indicated, and should always be tried.

3. Pleuropneumolysis, or extensive rib resection, is a dangerous procedure, with additional dangers in bronchiectasis. It should be employed only when

adherent pleura prevents the introduction of nitrogen gas. Even then it is a dangerous procedure, and one of doubtful value.

4. In late cases of bronchiectasis, when the disease is obviously confined to one lobe, lung resection is the sole hope of surgical cure. The attempt at lung resection at a one-stage operation has been attended with high mortality. Occasional successes do not prove that the one-stage amputation will become the method of choice. For the time being, at least, the general surgeons should first produce compression of the lung by artificial pneumothorax or pulmonary arterial ligation, second, and much later, he should excise. Meanwhile let us hope that the student of thoracic surgery will develop the one-stage excision.

BARNEY BROOKS.

**Murphy, F. T.: The Choice of Anæsthetic in Operating for Abscess of the Lung.** *Ann. Surg.*, Phila., 1914, lx, 36.  
By Surg., Gynec. & Obst.

The introduction of positive and negative pressure methods by Lauerbruch, Brauer and Peterson, and Meltzer and Auer have made progress in intrathoracic surgery possible. Murphy thinks that non-tuberculous abscesses of the lung should be healed the same as any other abscesses and drainage instituted so as to limit the spread of the infection and to conserve the strength of the patient. Sharp distinction should be made between intrathoracic operations in which the pleura will be opened and those in which the pleura will not be opened. Adhesions walling off the pleura are formed in 50 per cent of cases by Nature. In those cases in which the pleura has not been so walled off the operation should be performed in two stages.

In the first stage the skin-flap is turned back, the ribs resected subperiosteally, and the lung sutured to the pleura; gauze may be used. At the second operation the abscess is opened through the adhesions.

Considering the late effects of chloroform, the author says: "I think we can no longer justify its use as a general anæsthetic." Ether is irritating to the respiratory mucous membrane.

"Any general anæsthetic increases the danger of pulmonary infection and should be used only in cases in which, on account of the failure to localize the cavity, preliminary exploration of the lung is necessary, or in children who cannot be controlled with a local anæsthetic."

ISIDORE COHN.

### HEART AND VASCULAR SYSTEM

**Proust, R.: Distant Result of a Suture of the Heart, following a Wound by Pistol-Shot.** *Ann. Surg.*, Phila., 1914, lix, 968.

By Surg., Gynec. & Obst.

Four years ago the author operated on a boy 15 years old for a gunshot wound of the heart, with apparently complete recovery.

When first seen the boy was dyspnoic and very

thirsty, showing evidences of shock. The pulse was 100, very irregular, and of poor quality. The beat of the heart was muffled and the dulness enlarged at the base; from the bullet wound came a continuous stream of blood.

Operation was performed and the pericardium opened. It was found to be filled by a blood-clot around the base of the heart. When this clot was removed, a spurting wound was noted in the left ventricle; this was closed. In closing the pericardium a rubber tube drain was used. This drain became plugged and caused some retention of a serous fluid, but on removing the drain the symptoms all cleared.

After leaving the hospital the boy took up his duties as messenger boy without any difficulty.

Four years later an X-ray photograph showed a normal heart except for a notch at about the level of the old scar and a narrowing of the lower portion of the œsophagus, probably due to an old pericarditis.

EUGENE CARY.

**Carrel, A.: Experimental Operations on the Orifices of the Heart.** *Ann. Surg.*, Phila., 1914, lx, 1.

By Surg., Gynec. & Obst.

The author gives a report of experimental work on animals, undertaken for the purpose of investigating the possibility of performing certain plastic operations on the orifices of the heart. The animals were anesthetized by the Meltzer-Auer method. The heart was exposed and the circulation arrested by the application of a "large soft jawed forceps" across the pedicle. The technique and results of

three types of operation are described: (1) opening of the aorta and cauterization of the sigmoid valves; (2) suture of the sigmoid valves of the pulmonary artery; (3) patching of the pulmonary artery and arterial cone. The last type of operation, which was for the purpose of enlarging the pulmonary orifice, was performed without the arresting of the circulation, although the author thinks this step would have simplified the operation without adding much to its danger.

Besides those intended for the prevention of infection, the most important features of the technique are those of the arrest of the circulation and the making and closing of the incision into the heart cavity. The essentials of the former are the application of the clamp in such a manner that no injury is done and the limitation of the time of the arrest of the circulation to a period of two and one-half to three minutes. There should be no venous stasis immediately preceding the application of the clamp and the blood should be overventilated. The essentials of the latter are that the incision must be made and closed in such a manner that no larger branch of the coronary arteries is obstructed; and air must always be removed from the left ventricle or aorta by aspiration before the circulation is reestablished.

From the experiments carried out the author is led to believe that it is possible to perform certain plastic operations on the orifices of the heart without danger to life, and the results of the operative procedures indicate that certain valvular lesions may some time be treated by the surgical method.

BARNEY BROOKS.

## SURGERY OF THE ABDOMEN

### ABDOMINAL WALL AND PERITONEUM

**Hilse, A.: Experimental Studies in Free Transplantation of Fat, in Hæmorrhage from Parenchymatous Abdominal Organs** (Experimentelle Untersuchungen über freie Fetttransplantation bei Blutungen parenchymatöser Bauchorgane). *Arch. f. klin. Chir.*, 1914, ciii, 1042.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author gives a description of 19 cases of free transplantation of fat for defects in parenchymatous organs: 10 of them in the liver, 5 in the spleen, and 4 in the kidney; 13 of them were performed on rabbits and 6 on dogs. In 6 cases also fascia was transplanted in rabbits, 3 times in the liver, once in the spleen, and twice in kidney resections, and in 1 case an injury in the liver was covered with omentum.

In dogs the fat was taken from the subcutaneous cellular tissue from the abdominal incision, but in rabbits it was taken from the thigh and carefully dissected from the fascia. The fat-flaps were wrapped in warm compresses of physiological salt solution and generally applied to the bleeding place

after five to ten minutes. Care was taken to cover the defects completely and allow the fat-flap to extend over the edges somewhat. It was important to keep the flaps pressed down on the surface of the wound for a few seconds or minutes with a spatula or some other flat instrument, so that it should not be washed away by the blood. After that it adhered so firmly that the fixation sutures, which were put in at first, were found to be unnecessary.

Experiments were performed only on large wounded surfaces; the organ was never compressed beforehand. In all cases the fat-flaps took firmly and without reaction, and adhesions were formed only with the injured surface and not with intact peritoneum. There was never necrosis nor formation of abscesses. Macroscopically there was at first œdematous swelling and colloid degeneration of the transplant, but later it contracted and was replaced by connective tissue. The intensity of the changes seemed to be proportional to the size of the hæmatoma between the injured surface and the flap of fat; the injury was greater when direct contact with the wounded surface was prevented. Micro-



scopical examinations have not yet been made. The bleeding stopped in all cases without suture. Fascia has less hæmostatic effect.

As a blood-clot was formed very quickly even when there was not immediate adhesion of the fat to the wounded surface, Hilse concluded that the fat must have specific blood-coagulating (thrombokinetic) properties. He therefore studied the effect of extracts of fat, omentum, muscle, and fascia on blood coagulation *in vitro*, following Morawitz' technique. After aseptic laparotomy the tissues in question were removed with sterile instruments, freed of foreign tissue, weighed, macerated, rubbed up into a pulp, mixed in sterile glass cylinders with three times their amount of sterile salt solution, shaken for one-quarter to one-half hour, placed on ice for 12 hours, then filtered and the filtrate expressed. A turbid opalescent fluid was obtained, with which the experiments were performed. Before the tissues were removed some of the animals were bled and some of them were not, in order that their condition might correspond more closely to that of the animals in which the fat-flaps were applied.

For blood fresh blood was taken from the carotid of the horse, and 1 gm. of sodium oxalate added to each liter. In every test tube 2 ccm. of blood was added to the same amount of tissue extract, and physiological salt solution was placed in the control tubes; then a certain amount of a 2 per cent calcium chloride solution was added and the tubes shaken 5 to 10 seconds.

In conclusion, the coagulation time was noted. With the use of all the above-named tissue extracts there was a shortening of the coagulation time; there was no marked difference in the effect of the tissues from the animals that were bled and those that were not. If the extracts had stood longer than 12 hours on ice, their coagulating power was decreased. The tissues examined had about the same content in coagulating substances; the fat was at least not inferior in this respect, which the author believes is to be explained by the developmental relations between fat and blood-vessels. Extracts of human lipomata also shortened the coagulation time. It was shown by control experiments that the action was not simply that due to a foreign body. If omentum is used, there is danger of hæmorrhage from the stomach; fascia and muscle cannot be taken from the abdominal wound; therefore Hilse believes that the use of transplanted fat is the simplest and most reliable method for covering injuries in parenchymatous organs.

BERGEMANN.

**Goldschmid, E.: Pseudomyxoma of the Peritoneum after Cysts of the Ovary** (Das Wesen des Pseudomyxoma peritonei nach Cystoma ovarii). *Arb. a. d. Geb. d. path. Anat. u. Bakteriöl. Festschr. f. P. v. Baumgarten-Tübingen*, 1914, ix, 175.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The so-called pseudomyxoma of the peritoneum, that generally arises after ovarian cysts in the form

of large mucous cysts on the peritoneum, has hitherto been variously interpreted. Gynecologists have held that it was a true metastasis from displacement of epithelial cells with new-growth of mucous masses; while anatomists have held that it was merely the organization of mucous masses from the tumor. Werth called attention to the proliferating inflammation of the peritoneum at the places where the colloid masses lay; but the thought has never before been brought out that it might be a plastic foreign body peritonitis.

The author had occasion to examine three cases. In the first specimen, pseudomucinous cyst of the ovary, the peritoneum of the capsule of the spleen was very much thickened and showed marked connective-tissue proliferation under the mucous masses. He found the same thing in the second case. There were few or no epithelial islands, proliferation of connective tissue with new-formation of vessels and giant-cells in the peritoneum. In a third case of extensive myxoma in the form of large tumors he found, besides inflammatory proliferation of the peritoneum in individual places, acute proliferation of displaced epithelial masses on the intestine with mucoid new-growth.

Since the secretion is too tough to be absorbed, the peritoneum reacts in the form of a plastic inflammation. The epithelium either dies, or it may proliferate, as in the third case, and lead to true transplantation metastasis. This generally happens in old people who have a tendency to epithelial proliferation. The transplanted epithelial masses may perish quickly or the pseudomyxoma may persist for a long time without becoming very large, or finally the cells may show malignant degeneration; this, however, seldom occurs.

RITTERSHAUS.

**Resinelli, G.: Surgical Treatment of the Peritoneum** (Il trattamento chirurgico del peritoneo). *Ginec.*, 1914, x, 569.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The history of the surgical opening of the abdomen is reviewed. The great resistance of the peritoneum to bacteria is pointed out, which, however, is markedly affected by chemical, mechanical, and other irritations; therefore, antiseptics should not be introduced into the abdominal cavity. The touching of the resected ends of the intestine with tincture of iodine, however, can be borne. In abdominal operations the author prefers wet compresses, although he thinks the importance of the question as to whether wet or dry compresses should be used is very much exaggerated. He always uses silk sutures; stitch abscesses can be prevented. Drainage of the abdominal cavity should be avoided as much as possible; even after the evacuation of pus the abdominal cavity should be closed if the number of bacteria in the pus is small. He does not favor irrigations of salt solution, prophylactic injections of camphorated oil, nuclein, oxygenated water, or horse serum. He recognizes the value of stimulating general leucocytosis by



Mikulicz' method, and injects hypodermatically a solution of 25 cg. of nuclein in a physiological salt solution. In spite of the most careful asepsis bacteria always get into the abdominal cavity during an operation, but their number can be limited by certain measures in addition to the ordinary rules, such as quicker operation, small abdominal incision, and the wearing of face masks to protect the surgeon and his assistants from bacteria.

HERHOLD.

**Niederle, B.: The Treatment of the Hernial Sac in Hernias with an Incomplete Sac—the So-Called Sliding Hernia** (Die Versorgung des Bruchsacks bei den Hernien mit unvollständigem Bruchsack—sog. hernie par glissement). *Čas. lékař. česk.*, 1914, liii, 480.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Sliding hernias may be congenital, as Niederle observed in the case of a three-months' old boy, who for two months had had a hernia on the left side, which contained the sigmoid flexure. In the first case of sliding hernia which he operated on in 1903, Niederle simply pushed back the intestine into the abdominal cavity and applied a firm suture to the hernial opening, but the intestine still continued to push forward. Therefore since 1905 he has used the following method: The sac of the hernia is incised to the place where the intestine forms the wall of the hernia, and the superfluous (free) peritoneum of the hernia is resected. Then the intestine is drawn upward, so that the resected edges of the hernial sac can be applied to each other, and with a few sutures fastened to the posterior (peritoneum-free) side of the intestine in such a manner as to form a new mesocolon. As a result of this the intestine gradually slides back into the abdominal cavity and disappears in it completely. The remaining small opening in the sac of the hernia is closed with a purse-string suture.

When the method is properly carried out, there is no further tendency to prolapse, and the closure of the hernial opening follows. In cæcal sliding hernias the appendix is removed. In 7 cases recovery was rapid, and all the results were permanent. Hotchkiss seems to have used a similar method.

KLAUBER.

**Ehler, F.: Radical Operation for Inguinal Hernias with Prolapse of the Large Intestine** (Beitrag zur Radikaloperation der Leistenhernien mit Senkung des Dickdarms). *Čas. lékař. česk.*, 1914, liii, 475. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author discusses sliding hernias which originate from the congenital position of the large intestine, especially the cæcum, as when the cæcum lies near the inguinal canal or its mesocæcum is lengthened and formed of yielding connective tissue with long vessels. A further cause of prolapse of the large intestine is the effect of chronic abdominal pressure, as in coughing, crying, and chronic constipation.

In the last 3 years among 188 cases of inguinal and femoral hernia, Ehler has seen 10 cases in which the large intestine was contained in the hernial sac, the cæcum 9 times, and the appendix once. Two of them were left inguinal hernias. Only three of the cases were sliding hernias. For these he recommends an oblique incision, half of it below and half above the external inguinal ring; the neck of the hernia being immediately laid bare, for in sliding hernias the sac is often only a small funnel on the median side of the intestine. The sac is opened and the small intestine and omentum replaced.

He gives the following method for reposition in sliding hernias, by which laparotomy can be avoided. In order to transform the fixed and irreducible cæcum into a freely movable intra-abdominal one like the small intestine, a suitable mesocæcum must be formed from the peritoneum of the hernial sac. From the inner side of the hernia an incision is made around the prolapsed large intestine about 2 cm. from its edge. The incision begins and ends at the neck of the hernia. The intestine with its vessels is dissected from the underlying tissues and the incised edge of the sac closed behind the intestine with sutures. In this way the intestine is freed and surrounded with peritoneum, so that it can easily be replaced in the abdominal cavity. The abdominal opening in the sac is then closed with a purse-string suture. If the spermatic cord cannot be isolated, the sac is left *in situ*, so that castration can always be avoided. The hernial opening is closed with muscle by a plastic operation. This method, which Ehler has used in three cæcal sliding hernias, but in none containing the sigmoid, is simple in contrast with the methods described by Barker-Hartmann, Morestin, and Jianu, and also in comparison with resection of the intestine. It can be used with good results in the dangerous condition in which most old people with hernias are found. KLAUBER.

**Pybus, F. C.: A Case of Left Duodenal Hernia in a Child.** *Brit. M. J.*, 1914, ii, 14.

By Surg., Gynec. & Obst.

The author describes a case of intestinal obstruction in a male child of five years, who was operated on by abdominal section two weeks after the beginning of an attack of scarlet fever. The scarlet fever seemed to have no deterrent effect on the recovery.

The history was four days of abdominal pain, and no movement of the bowels for five days; a definite mass could be felt in the left side of the abdomen, but nothing could be felt by rectum; there was no blood by rectum.

At operation there was found a small amount of slightly distended and congested coils of small intestine on the right side of the abdomen. On the left was a visible rounded mass the size of an ostrich egg, retroperitoneal, to the left and chiefly below the umbilicus. It was tense and resonant on percussion; no collapsed intestine was found. Traction on the small intestine brought out of the sac the cæcum, part of the colon, and most of the ileum.



These were not damaged. The orifice of the sac was situated to the left side of the duodenojejunal flexure, and this intestine formed its inner margin. It was bounded elsewhere by a fold of peritoneum, which was thick at its free edge. The orifice was oval in shape, about two by one and one-half inches. The sac was limited to the left side of the spine and extended outward toward the descending colon, upward to the kidney, and downward in a longer direction to the left iliac fossa, the left colic vessels being seen in its anterior wall. The orifice was obliterated by catgut sutures and the child made an uneventful recovery.

LLOYD T. BROWN.

**Barrett, J. B.:** Five Cases of Strangulated Hernia in Infants; with an Account of a Rapid and Efficient Surgical Procedure. *Med. Press & Circ.*, 1914, xcvi, 12. By Surg., Gynec. & Obst.

The author thinks it is unwise and unnecessary to isolate and ligate the delicate sac of a hernia in an infant, as it must involve injury to the very delicate spermatic cord. Further, suturing of the external oblique fibers forming the external ring is also omitted. It is only necessary to define the internal oblique and conjoined tendon and to suture both to Poupart's ligament. The skin is then approximated carefully, preferably by subcuticular silkworm gut. The operation is neat; it involves no injury to the cord, and there is no mauling of the tissues. The presence or absence of the sac and the suturing or not of the thin and weak fibers of the external oblique have no influence on the return of the hernia. If the internal oblique and the conjoined tendon are properly sutured, with medium silk, to Poupart's ligament, the hernia cannot reappear.

The etiology and treatment is briefly discussed. The differences between this condition in infants and adults are briefly as follows:

1. Strangulation in infants usually occurs in large herniæ. In adults the opposite is almost always the rule.

2. Herniæ in infants never contain omentum.

3. Adhesions in the sac in infants are extremely rare. The author has seen only one case.

4. In infants and young children all inguinal herniæ are oblique.

EDWARD L. CORNELL.

**Fransen, J. W. P.:** Form and Functional Significance of the Great Omentum (Über Form und funktionelle Bedeutung des grossen Netzes). *Ztschr. f. angew. Anat. u. Konstitutionsl.*, 1914, i, 258.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Little is known of the form of the omentum. The studies for this work were made on frozen sections of cadavers. The normal form of the small intestine is that of a round tube. The antero-lateral surface of the omentum, that is, the one in contact with the anterior abdominal wall, is smooth, while the visceral surface has several projections which fill up the spaces left between the anterior loops of the intestine. The posterior surface accom-

modates itself to the irregularities in the intestine. If the loops of intestine lay directly against the abdominal wall without being covered by omentum, they would lose their round form and become flattened out. Also the anterior surface of the posterior abdominal wall shows small protuberances formed by the subperitoneal fat. There are also folds of mesentery between the loops of intestine which fill the dead spaces, and the appendices epiploicæ are also to be regarded as filling. Thus the position of the small intestine in the normal man is practically fixed, and the assumption that the loops can change their position materially is false.

The expression "floating intestine" is justified only in ascites. The presence of the omental apron and the rather fat mesentery favors peristaltic movements. When the fat disappears from these folds, the intestine probably loses its round form. This doubtless causes the interference with peristaltic movements in great emaciation and the favorable effect of the over-feeding treatment in enteroptosis. Under normal conditions the intestine never hangs on its mesentery. This fact is of importance in the technique of abdominal operations. The author especially mentions gastro-enterostomy and says that v. Hacker-v. Stockum's modification is the best method, because it considers the natural position the most, and therefore assures a quick and undisturbed restoration of function of the anastomosis.

HANS BRUN.

#### GASTRO-INTESTINAL TRACT

**Rehfuß, M. E., Bergeim, O., and Hawk, P. B.:** Gastro-Intestinal Studies; the Question of the Residuum Found in the Empty Stomach. *J. Am. M. Ass.*, 1914, lxiii, 11.

By Surg., Gynec. & Obst.

It has been rather generally accepted that the normal residue in the empty stomach should not exceed 20 ccm. The authors have employed a modified gastric tube, the end of which is weighted and seeks the lowest level in the stomach by gravity. They employed this tube in the examination of the empty stomach in a series of experiments upon healthy medical students. In each case they found the residue to exceed 20 ccm. and in some cases more than 100 ccm. In no case were macroscopic food-rests found, and although, microscopically, fat and occasionally a few vegetable fibers were found, meat fibers were never found.

In the study of the gastric secretion from the same subjects, the authors found the curve of secretion to fall into three types. In the first type the curve rose gradually, reaching a maximum, the limits of which were from 50 to 60 in terms of tenth normal sodium hydroxide and then gradually fell. The second showed a rapid rise, a sustained high point, and little tendency to drop even after the food had left the stomach in the normal time. The figures in this type may approach 100 and over. The third



type is the hyposecretory type and is like the first type, but the response is slower, the high point lower and less pronounced.

The conclusions reached by the authors are the following:

1. The accepted limit of the normal residuum of the empty stomach as 20 ccm. is false.
2. Examination by means of the old stomach tube is entirely inadequate.
3. The significance of the amount of residuum in relation to the diagnosis of ulcer must be seriously questioned.

J. H. SKILES.

**Hartert, W.: Value of the Röntgen Picture in the Diagnosis of Surgical Diseases of the Stomach**  
(Zur heutigen Wertung des Röntgenbildes in der Diagnostik chirurgischer Magenkrankungen).  
*Beitr. z. klin. Chir.*, 1914, XC, 549.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Though the röntgen picture has not supplanted the only clinical methods of examination in diseases of the stomach, there is no doubt that it has contributed a great deal to diagnosis, especially in carcinoma and ulcer. The author reports 250 cases. In other clinics transillumination seems to be preferred, but in Perthes' clinic they prefer to take the picture by means of a bismuth meal with the patient in the standing position. The stomach is emptied, the bismuth meal given, and the röntgen picture taken.

In 90 cases of carcinoma the presence of cancer was demonstrated 60 times with the röntgen picture, while a tumor could be demonstrated by palpation in only 57 cases; free hydrochloric acid was lacking in 75 of the cases. The chief radiological symptom is defects in the shadow, which are more pronounced in the medullary forms that project far into the lumen of the stomach, while there is only a slighter narrowing of the lumen in the scirrhus infiltrating forms.

The pictures are the clearest in diseases of the pylorus or prepyloric region. In these cases there are three types of characteristic defects in the shadows: (1) The pylorus defect—the breadth of the defect Schmieden calls the carcinoma distance; (2) the pyloric plug: from the boundary of the bismuth that extends irregularly toward the cardiac end a projection of greater or less length extends into the defect, without reaching the duodenal shadow, however, so as to form a continuous shadow; and (3) cylindrical contractions in infiltrating scirrhus cancer of the pyloric region.

Röntgen sketches illustrate the above three forms. In many cases the röntgen picture was confirmed by operation or autopsy. In two cases there was extreme prolapse of the stomach, to the symphysis, which is generally caused only by benign stenosis of the pylorus; here there is no defect, naturally, as the bismuth only fills a part of the stomach. The röntgen picture does not give any information as to operability; adhesions and metastases are not shown; as before, the decision as to the advisability

of exploratory laparotomy must be made on clinical grounds.

Röntgen examination is of value not only in carcinoma of the pylorus, but in carcinoma of the body of the stomach. Carcinoma of the greater curvature, which is generally of the freely proliferating fungous form, and consequently reaches a considerable size, is shown by large defects; if it has involved the whole circumference of the stomach the picture of hour-glass stomach is given. In contrast with hour-glass stomach due to ulcer, in which the contracted place is sharply defined, as if made by a string drawn around it, carcinomatous hour-glass stomach shows a comparatively broad contracted place; the contraction also involves the greater and lesser curvatures alike, so that the contracture is in the midline, while in ulcer only the greater curvature is affected, so that the contracted portion seems to be displaced toward the smaller curvature. Moreover, the contraction is not so great in degree in cancer as in ulcer, so that the bismuth meal passes more quickly into the pyloric sac.

The author comes to the conclusion that an hour-glass stomach in which the cardiac sac fills first is not due to carcinoma. Errors may be caused by tumors outside the stomach, even by enlarged spleen and by a distended splenic flexure of the colon; in contrast with the other defects that have more or less jagged edges these are slightly curved and regular in outline. Since carcinoma of the lesser curvature is generally accompanied by contraction, the stomach appears in the röntgen picture to have its long axis shortened, the lesser curvature runs in almost a straight line, and as a consequence the greater curvature seems to form almost a circle. Carcinomata of the fundus are hard to diagnose radiologically (distention of the stomach and displacement towards the liver).

The hoped-for early diagnosis of cancer of the stomach cannot be made by the röntgen picture for various reasons. While radiology has not contributed anything to the scientific knowledge of cancer of the stomach, it has to that of ulcer. The spastic contraction of the stomach musculature, a result of chronic irritation in ulcer, shows in the röntgen picture as a strangulation with deep, steep edges. The lengthening of the time required for emptying the stomach is hard to demonstrate radiologically (Haudeck); in penetrating ulcer there is frequently a diverticular projection, generally in the region of the lesser curvature; we owe our knowledge of intermittent hour-glass stomach to the röntgen picture. The author gives a detailed discussion of intermittent, spastic, and cicatricial hour-glass stomach. Röntgenology is also valuable in judging the results of operation for ulcer; for example, in several cases in which gastroenterostomy had been performed for ulcer of the pars media a röntgen picture showed an increase in the ulceration accompanying the return of the old subjective symptoms, which has resulted in the



giving up of gastro-enterostomy in such cases in favor of transverse resection.

KNOKE.

**Eusterman, G. B.: Hour-Glass Stomach and Duodenum.** *J. Mich. St. M. Soc.*, 1914, xiii, 417.  
By Surg., Gynec. & Obst.

In a rather extensive article the author discusses all the phases of the hour-glass stomach. He believes that it is due to an ulcer in all cases — even fetal. There is no characteristic symptom-complex. The symptoms are those of peptic ulcer plus obstruction.

The röntgen examination was indispensable and it invariably gave the first definite evidence of the presence of the hour-glass stomach. Eusterman gives the differential points between malignant and benign hour-glass deformities.

In the author's series of 37 cases, 24 appeared in females. The ages ranged from 25 to 70 years, the average being 45. The average duration of symptoms was 9 years. Twenty-two were operated on during the third and fourth decades of life. The symptom-complex was typical of peptic ulcer in 80 per cent. A small percentage of error in diagnosis was shown in the cases which perforated and simulated cholelithiasis, and in the markedly obstructed cases, with tumor, cachexia, and achlorhydria, which simulated gastric carcinoma. Pain, variable in degree, was a symptom common to all cases. In the cases which perforated, it was acute and often prostrating; in 15 instances it was definitely localized to the left epigastrium. General epigastric and posterior radiation was common. Tenderness was present at some time in all cases and in 70 per cent it occurred while under observation. In 27 patients there was a definite onset of pain from one-half to four hours after taking food; in 13 of these the onset was from one-half to one and a half hours after food. In the remaining 11, the pain was noted two to four hours after meals; in 7, not stated; and in 5, irregular. Relief of pain by food, soda, or vomiting, or by combination of these measures, was noted in 95 per cent of the cases.

Hyperacidity and vomiting were present in 70 per cent of the cases; hæmatemesis, single or repeated, in 35 per cent; associated melena in 24 per cent. There was definite gross obstruction after twelve hours, and altered blood in the gastric extract was present in 35 per cent of the cases. The average total acidity was 47 per cent, free hydrochloric acid 36 per cent, acid salts 12 per cent, and achlorhydria in 7 cases.

Calloused saddle ulcers of the lesser curvature, often extensive and adherent to the liver, with variable degrees of inflammation and constriction, were noted in 50 per cent of the cases. In the remainder the site of the ulcer was as follows: Prepyloric and lesser curvature, 4; posterior wall and lesser curvature, 6; fundus and greater curvature, 2; posterior wall, 4. Chronic or subacute perforation was present in 16 cases. The ulceration was frequently extensive. The favorite site of constriction

was at the pars cardiaca or media; the upper loculus was usually the smaller, owing to the high situation or extent of the ulcer. There was coincident ulcer of the duodenum.

Eight cases of malignant hour-glass stomach were noted: 7 males and one female. A huge carcinomatous ulcer was the causative lesion in 5 cases and a malignant tumor in 3. All were situated in the lesser curvature and in 3 the posterior wall was involved.

Eight cases of hour-glass duodenum are mentioned — six males and two females. With one exception, pain appeared two to four hours after meals and was regularly relieved by food, soda, or lavage. Marked pyloric obstruction was present in all but one case. The ulcers were large, thick, and calloused and sometimes had crater formation. They usually implicate the pylorus. The posterior and anterior superior walls are invariably involved, the ulcer extending downward from the upper aspect of the pylorus on the superior wall of the duodenum, producing a pouching like an hour-glass. This pouch may be one and a half to two inches in extent.

The treatment is essentially surgical, otherwise the prognosis will be unfavorable. In the 37 cases of hour-glass stomach, the following operations were performed: Gastrogastrostomy 10; posterior gastro-enterostomy 8; resection in continuity 2; partial resection 1; Witzel jejunostomy 1; exploration 1; anterior gastro-enterostomy 1; Hartman gastropasty 5; combined operations (gastrogastrostomy and gastro-enterostomy) 3; gastropasty, with excision, 2; anterior gastro-enterostomy, with excision, 1; gastropasty and gastro-enterostomy 2. In the malignant hour-glass cases, a palliative gastro-enterostomy, or exploration, was done. In the 8 cases of hour-glass of the duodenum, posterior gastro-enterostomy was done 7 times and excision with plastic enlargement once.

EDWARD L. CORNELL.

**Wilkins, W. A.: The Present Status of the Röntgen Examination in the Diagnosis of Gastric Ulcer.** *Canad. M. Ass. J.*, 1914, iv, 493.

By Surg., Gynec. & Obst.

Wilkins believes that the röntgen ray furnishes information of very great value and is far more reliable than the chemical examination of the stomach contents. In the use of the röntgen ray, the physician must not expect to find a short cut to diagnosis, but should always consider very carefully the clinical history and the examination of the stomach contents. A visit to the röntgen department should be part of the routine in all cases of suspected gastric or duodenal ulcer, provided the condition of the patient will permit. The röntgen examination may also indicate the line of treatment, whether surgical or medical. Wilkins is of the opinion that if the stomach is empty within eight to ten hours, probably medicinal treatment with dieting will suffice; if there is retention much



beyond that period, or penetrating ulcer, or definite hour-glass, mild measures will be useless and surgical interference will in all probability be necessary.

Wilkins describes two kinds of röntgen ray evidence — dynamic and static.

The dynamic evidences are produced by a disturbance of motive power of the stomach and are generally indicative of a condition of irritation, as the stomach is an extremely sensitive muscular organ and irritation results in muscular spasm. The spasm may be due to functional or to organic conditions originating within the stomach or, reflexly, to conditions outside the stomach. If the spasm, most frequent at the junction of upper and middle third, persists for a considerable length of time, in spite of vigorous rubbing of the abdomen, ulceration or cicatrization is the most likely cause of spasm. Wilkins fortunately adds, however, that, although gastric ulcer is the most frequent cause of spasm, the diagnosis should not be made unless supported by other facts. Other dynamic röntgen findings are increase in the number, frequency, and depth of peristaltic waves, best seen upon the fluorescent screen, but, necessarily, a variable factor. Antiperistalsis is mentioned as a valuable but infrequent finding.

Wilkins gives importance to the emptying-rate. His normal emptying-rate for a bismuth meal is three or four hours, a little faster than Holzkecht's arbitrary of six hours. Wilkins states that in gastric ulcer, associated with spasm of the pylorus, the meal is retained for six to eight hours longer. In spasm of the pylorus there is a narrow stream of bismuth representing the lumen of the pylorus connecting the stomach with the duodenum. Normally, this stream is exactly in the center of the clear-place which represents the sphincter. In a pathological condition of the pylorus this may be irregular or displaced to one side. A clear stream of bismuth indicates that the pylorus is patent. The presence of the above dynamic manifestations, combined with the painful pressure-point in a stomach contour, which is more or less normal, would indicate a florid ulcer or irritable scar.

The static evidences of gastric ulcers are seen more frequently in cases of long duration. The dynamic disturbances are commonly associated, and, when present, may or may not indicate that the process is still active. There may be alteration in the size of the stomach, generally an increase from dilatation or hypertrophy; low position from pylo-roptosis; the shape of the stomach may be altered, owing to active ulceration, cicatrization, or to adhesions.

Wilkins' discussion of the static evidence of gastric ulcer is simply a repetition of much of what has been written by German authors before.

In his discussion upon duodenal ulceration he suggests that as the clinical picture is often indefinite and less pronounced than gastric ulcer, so, too, are the röntgen findings. Duodenal ulceration, unless it has progressed to cicatrization or adhesions,

cannot be directly demonstrated, although some attach importance to unusually powerful peristalsis in a hypertonic stomach with rapid emptying rate. The presence of a definite shadow in the lower part of the first portion of the duodenum, almost continuous with the gastric shadow and unaffected by gastric peristalsis, persisting after the stomach is empty, is indicative of ulcer or cicatrix. He repeats Cole's indications of duodenal adhesions.

Wilkins has used barium sulphate for some time and is not convinced that this opaque salt materially lessens the emptying-rate of the stomach or alters our previous conceptions of large bowel progress. He maintains that the use of both fluorescent screen and plates are essential, the screen being of far greater value than the plate. E. H. SKINNER.

**Mathieu, A.: Studies of the Pathology of Ulcer; the Symptom-Complex of Pyloric Ulcer** (Études sur la pathologie de l'ulcus. Le syndrome ulcéro-pylorique). *Gaz. d. hôp. civ. et milit.*, 1914, lxxxvii, 581.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

An almost certain sign of hypersecretion is the presence of gastric juice in the empty stomach. But there is one possible source of error, especially in tabes, namely, the possibility of the collection of swallowed saliva. Tabetic crises are frequently accompanied by salivation. Bile is found in the empty stomach only after regurgitation of duodenal contents caused by retching on passing the stomach tube. The author has never seen the so-called myxorrhœa described by Kuttner. Hypersecretion can only be recognized when it is accompanied by a certain degree of retention. Then it is practically pathognomonic of ulcer. There are exceptions, but they generally occur in the premonitory stage of ulcer. For it is not improbable that in man, as in dogs, the long-continued retention of hyperacid secretion in the stomach leads to ulcer.

The second most important symptom of justapyloric ulcer is late pain, two, three, or more hours after meals, which is stopped by the taking of alkalies or food. The older the ulcer is the shorter the time between the meal and the appearance of the pain. The pain is not caused simply by spasm of the pylorus, as many think. In ulcer there is almost always hyperæsthesia of the solar plexus. Late pain and hyperchlorhydria do not always coexist, and in some cases of cancer of the stomach there is late pain; but in such cases it is not stopped by alkalies or food, but rather increased. This is not true of carcinoma following ulcer. It may be difficult to distinguish the pain of ulcer from that of gall-stone colic, chronic cholelithiasis, chronic pancreatitis, and the pains of collitis and pseudotabes. He gives cases in which the pain of ulcer was for a long time attributed to tabes. He gives signs that aid in differential diagnosis. Sometimes this can only be accomplished by operation.

RUGE.



**Bratrud, T.: Intestinal Polyposis; with Report of a Case with Three Intussusceptions.** *Surg., Gynec. & Obst.*, 1914, xix, 30.

By Surg., Gynec. & Obst.

Intestinal polyposis presents a variable clinical picture. There is a great deal of confusion regarding the term "intestinal polyposis." Gastro-intestinal polyposis describes the condition more accurately, because polypi of identical structure, closely resembling the adenoma type, are found in the entire gastro-intestinal tract, varying in number from one to large numbers. Polyposis has been found very frequently post-mortem and in some cases without any clinical history pointing to its presence. In other cases intussusception of a recurring type is the principal symptom. This is the case where the polypi occur in the ileocaecal region. Malignant degeneration plays a very important rôle.

The writer reports a case of a girl 16 years of age who had suffered for one year with recurring attacks of abdominal pain and vomiting, suggesting obstruction. These attacks had been increasing in frequency and severity until operation was clearly indicated. Before operation a sausage-shaped movable tumor was felt above the left Poupart's ligament. On opening the abdomen this was found to consist of an intussusception of the upper end of the sigmoid. After reducing the invagination, two tumor masses were felt in the sigmoid at a point corresponding to the apex of the invagination. These masses were removed through an incision into the bowel. The patient did nicely for 17 days, when she was once more taken with symptoms of obstruction and a tumor was felt above the right Poupart's ligament. At operation the entire gastro-intestinal tract was examined and two intussusceptions were discovered, one of the ileum and cæcum into the ascending colon and one of ileum into ileum. A group of polypi was found corresponding to the apex of each invagination and a third group about nine inches above the lower intussusception in the ileum. The four groups of polypi showed similar structure bordering on the adenoma type. The patient made an uneventful recovery.

#### LIVER, PANCREAS, AND SPLEEN

**Beresnegowsky, N.: Experimental Study of Free Transplantation of Omentum to Control Hæmorrhage from the Liver** (Über die Anwendung des isolierten Netzes zur Stillung der Leberblutung. Experimentelle Untersuchung). *Arch. f. klin. Chir.*, 1914, civ, 287.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author performed experiments on 14 dogs: in 7 cases lacerated wounds of the liver; in 2, incised wounds of the liver; and in 5, wounds of the spleen were covered with omentum that was fixed with fine silk. In 9 cases a tampon of omentum was placed in the liver wound and the wound covered with a second piece.

The results were as follows: In 6 of the liver cases the wound cavity filled with blood and the covering

of omentum was pushed outward; in 4 cases the blood trickled out, and in 3 cases there was hæmorrhage through the covering piece of omentum. Of the 9 animals operated on 2 died of hæmorrhage. In 3 cases hæmatomata developed, and in all cases there were extensive adhesions. They were under observation for 11 days. The experiments on the spleen were more favorable. They were under observation 26 days. The wounds were covered with a layer of omentum; the sutures in all cases held and there was never hæmorrhage into the abdominal cavity. The wounds in the spleen were filled with blood in all cases. The omentum always lived and was gradually replaced by connective tissue. Free transplantation of omentum was used in 5 liver and 4 spleen injuries.

Blood collected under the omentum in all cases, but the first ones lived. The post-operative course was not without complications, especially in a case in which a large gall-duct was injured. The free transplantation of omentum was used 7 times after resection of the liver. In all cases tampons had to be used to control the hæmorrhage. In most cases blood was found under the flaps. In the cases which recovered there was a thin connective-tissue capsule at the site of the transplanted omentum. In 6 dogs ligation *en masse* was performed; 2 of them recovered. The best results were obtained by a combination of transplantation of omentum with ligation *en masse*. The details of this method must be read in the original.

NORDMANN.

**Lenormant, C.: A Case of Injury of the Gall-Bladder** (Un cas de plaie de la vésicule biliaire). *Bull. et mém. Soc. de chir. de Par.*, 1914, xl, 614.

By Journal de Chirurgie.

A young girl shot herself in the right hypochondrium. Laparotomy showed that the gall-bladder was discharging bile through an orifice on its inferior surface. Further examination showed that the liver and gall-bladder had been completely traversed by the bullet, and there was also a perforation of the first portion of the duodenum near the posterior-superior border. This was closed with a purse-string suture and the gall-bladder was removed. The abdomen was drained. Recovery was complete and permanent.

Injuries of the gall-bladder are very rare. Lenormant could find only 24 cases treated surgically. Stab wounds are more frequent than gunshot wounds—15 to 9. In gunshot wounds the bullet often remains in the gall-bladder. In 10 of the 24 cases only the gall-bladder was injured; in the other 14, other organs were involved: 7 perforations of the liver, 5 of the intestine, and 2 of the stomach. The symptoms are those of any abdominal wound. The only pathognomonic one, the discharge of bile through the abdominal wound, occurs only when the wound is large and those in the gall-bladder and abdominal wall are parallel.

Operation is the only treatment. The only question is whether the gall-bladder should be



sutured or removed. Lenormant believed that cholecystectomy was the most simple and most logical; but he found that most surgeons preferred suture of the wound. Among the 24 cases 17 were treated in this way, while cholecystectomy was performed in only 4; in three cases, operated on late, or where the patients were in a dangerous condition, the wounds were only tamponed and drained.

The results are encouraging. Among the 24 cases there were 19 recoveries and 5 deaths, 20.8 per cent mortality; the 17 cases treated by cholecystorrhaphy gave 4 deaths; the 4 cholecystectomies all recovered; the 3 cases treated by tampon and drainage gave 2 recoveries and one death.

J. DUMONT.

**Henes, Jr., E.: The Value of the Determination of the Cholesterol Content of the Blood in the Diagnosis of Cholelithiasis; Preliminary Report.** *J. Am. M. Ass.*, 1914, lxiii, 146.

By Surg., Gynec. & Obst.

Because cholesterol plays such an important part in the formation of gall-stones Henes thinks that a hypercholesteremia must be the primary etiological factor in cholelithiasis. Therefore he infers that to treat gall-stones correctly one must keep his eyes on cholesterol.

In making the quantitative cholesterol determinations he uses the method of Weston and Kent with the colorimetric estimation of Grigaut. The normal cholesterol content of normal blood is 1.48 gm. per thousand ccm. of serum. It has been noted that fever reduces the amount of cholesterol in the blood, and nephritis, arteriosclerosis, and jaundice increase it.

A summary of the 21 cases reported leads to the belief that a high cholesterol content without nephritis or arteriosclerosis tends to gall-bladder involvement, while if fever is present the content is very low. After operation, when the fever has subsided, the cholesterol content will rise markedly. In post-operative cases, nineteen days after operation for gall-stones, the cholesterol content of the blood was as high as 3.96 gm. per thousand ccm. serum.

EUGENE CARY.

**Souligoux, C.: Left Subphrenic Hæmatoma of Splenic Origin; Death from Renewed Hæmorrhage after Rupture of the External Capsule of the Spleen** (Hématome sous-phrénique gauche d'origine splénique; mort cas hémorragie nouvelle après rupture de la capsule externe de la rate). *Bull. et mém. Soc. de chir. de Par.*, 1914, xl, 647.

By Journal de Chirurgie.

Souligoux reports a new case of spontaneous subphrenic hæmatoma. A man of 34 suddenly, without cause, felt a violent pain in the lower part of the left side of the thorax. It was thought at first that it was a pleuropulmonary lesion; but as a fresh crisis showed evident abdominal reaction, operation was undertaken through the abdomen. The abdomen was full of blood, evidently coming from the rupture of a subcapsular hæmatoma of

the spleen. Splenectomy was followed by death at the end of the operation. At autopsy nothing was found to explain this subcapsular splenic hæmorrhage.

QUÉNU says there are many origins for subphrenic hæmatomata. They may be divided into traumatic and spontaneous. Among the latter some are primary hæmorrhages that have afterwards become encysted; while some are hæmorrhagic cysts, that is, the cystic wall was formed first and effusion of blood took place into it afterwards. He described a case that he had recently observed in a diabetic 76 or 77 years old, who had been operated upon six years before for a carcinoma of the sigmoid and who had remained well since that time.

J. DUMONT.

**Finkelstein, B. K.: Surgery of the Spleen.** *Brit. J. Surg.*, 1914, ii, 68.

By Surg., Gynec. & Obst.

Surgery of the spleen is undertaken for the following conditions: stab wounds, gunshot wounds, rupture, abscesses, echinococcus cysts, non-parasitic cysts, tumors (sarcomata), displaced or wandering spleen, fixed malarial spleen, and fixed malarial spleen with ascites.

In traumatic affections of the spleen the treatment is self-evident — an immediate operation must be performed. Surgical treatment saved 50 per cent of 61 cases of gunshot wounds and 80 per cent of 38 cases of stab wounds. In rupture of the spleen operative interference has shown a mortality rate of approximately 40 per cent.

In the treatment of abscess of the spleen, surgery has made great progress. Of 55 patients operated upon, 13 died. More recent figures show a series of 14 cases with no deaths. In the operative treatment of echinococcus cysts very good results have been obtained. Ordinary operations for this condition gave no deaths. Splenectomy, however, resulted in a 20 per cent mortality. Non-parasitic cysts of the spleen also gave very satisfactory results when operated upon. Of 78 cases in the surgical literature, death resulted in 7 cases.

Referring to the question of tumors, the number of cases operated upon is small. But, unfortunately, in sarcomata, the most frequent form of tumors, death takes place within a comparatively short time from metastases or recurrence. In only 2 cases did recovery last for over six years.

Operative treatment is extensively applied in so-called wandering, or displaced, spleen. In most cases the spleen is considerably changed and splenectomy becomes the proper treatment. In fact, splenopexy has fallen into disrepute.

Clearly evident and simple as are the indications for operation in cases belonging to the above-mentioned groups, so, on the other hand, equally indefinite and vague are the indications in those diseases of the spleen which are closely connected with the general health of the patient, and are followed by grave disorders of the blood, digestion, and metabolism. The uncertainty of these indications



is caused by our imperfect knowledge regarding the functions of the normal and of the pathologically changed spleen.

Clinical observations show the remarkable influence of splenectomy upon several hæmolytic diseases. In cases of icterus hæmolyticus, Banti's disease, hypertrophic cirrhosis, anæmia perniosa, and icterus with atrophy of the liver, splenectomy has proved very successful.

In protracted malarial fever, removal of the spleen may seem advisable, many times with excellent results.

In malarial fever with ascites, removal of the spleen may result in a remarkable cure.

The procedure which the author recommends is

the following: A left rectus incision is made. When firm adhesions are present the lower cartilages must be dissected. The lower pole can be easily pulled out of the wound. The assistant separates the upper part of the wound with a wide blunt retractor. The operator introduces his hand into the left diaphragmatic space and by gently advancing movements of the fingers separates the upper pole from the diaphragm. The spleen is then taken out of the abdominal cavity and removed after carefully tying the vessels of the pedicle. The stump of the pedicle is covered with omentum and the outer wound sutured in layers. A tampon is left in the upper part of the wound and can be removed after 24 to 48 hours.

J. H. SKILES.

## SURGERY OF THE EXTREMITIES

### DISEASES OF THE BONES, JOINTS, MUSCLES, TENDONS. CONDITIONS COMMONLY FOUND IN THE EXTREMITIES

**Koch, J.: Localization of the Bacteria and Changes in Bone and Bone-Marrow in Infectious Diseases in Childhood** (Untersuchungen über die Lokalisation der Bakterien, die Veränderungen des Knochenmarks und der Knochen bei Infektionskrankheiten im ersten Wachstumsalter). *Berl. klin. Wchnschr.*, 1914, li, 289.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In the different hæmatogenous infectious diseases the causative bacteria always get into the bone-marrow. But there is a great difference in the pathogenic effect of the bacteria on the bone-marrow in the child's body and in the adult's. In the child, where the organs are in a state of active development and change, bacterial injuries have entirely different effects from those produced in adults.

Though bacteria are found throughout the bone-marrow, they predominate in certain segments, notably in the marrow of the metaphysis, at the boundary between bone and cartilage. Well-known examples of this are found in syphilitic osteochondritis, acute osteomyelitis, and bone tuberculosis in childhood.

Bacteria can be cultivated from the metaphysis even when there is not a general infection with demonstrable bacteria in the blood. For example, the author cultivated bacteria from the marrow of the metaphysis in children who had died, not of the acute infections, such as scarlet fever, measles, etc., but of their sequelæ, such as bronchopneumonia, gastro-enteritis, etc. The histological changes that were found in the bone in the neighborhood of the bacteria consisted for the most part of marked hyperæmia, increased atypical vessel formation in the endosseous capillaries, and an atypical formation of marrow spaces caused by it, a liquefaction of bone and cartilage tissue, and changes of a degenerative and productive nature in the bone-marrow and periosteum — processes such as are also seen in rachitic bone disturbances. It therefore seems quite possible that the bone changes produced by rickets are also infectious in nature. The author has tried to clear this question up by experiments on animals. In doing so he has determined the following facts: The child's osseous system suffers pathological changes from the different infections, among which the injury of the boundary between bone and cartilage is the most important. By liquefaction of bone substance the marrow cavity increases in size, the breadth of the cartilage and periosteum becomes greater from active proliferation of their cells, and the true zone of cartilaginous proliferation becomes smaller from destruction of its cells. In regard to the joints it is noteworthy that the pathogenic bacteria first locate, not in the joints, but in the marrow of the metaphysis and the para-articular and peri-articular tissues, and that the joints are only secondarily involved. Clinical experience has shown that joint effusions are at first sterile and later become infected from the bones. STAMMLER.

**Brandes: Osteochondritis Deformans Juvenilis** (Beobachtungen zur Osteochondritis deformans juvenilis). *Deutsche Gesellschaft. f. Chir.*, 1914. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author reports ten cases, in children from 4 to 13 years old, of Perthes' osteochondritis deformans juvenilis, which should be distinguished from arthritis deformans' as it differs in clinical symptoms, röntgen findings, and in the histological picture, which has heretofore not been studied in many cases.

The clinical symptoms are a limping gait, which begins at the age of 4 to 18 years and is generally without pain; it resembles the waddling gait of children with luxation. There is no pain on pressure or jarring of the hip; there is only a slight shortening of the leg and slight muscular atrophy. A typical phenomenon is the retention of capacity for complete flexion, while abduction is entirely inhibited. Trendelenburg's sign is positive or indicated.



In the early stages the changes in the röntgen picture are very slight. In the beginning there are clear spaces, foci of destruction in the bone substance of the head of the femur, which gradually changes the spherical shape of the head, until it may finally be quite flattened out; sometimes the entire epiphysis is divided into separate parts. The epiphyseal cartilage seems to be most involved in the process. As a final result tolerably good restoration of function may be expected in the small, flattened head, which offers sufficient articular surface, so that the interference with abduction and the limping gait decrease. It seems that this pathological process should be classified separately, as it is well defined clinically and in its röntgen findings, and has nothing in common with arthritis deformans. The peculiar cases that have heretofore been frequently confused with tubercular coxitis must be cleared up by further histological study.

KATZENSTEIN.

**O'Connor, J.: The Surgical Treatment of Streptococcic Arthritis.** *Lancet*, Lond., 1914, clxxxvii, 224.  
By Surg., Gynec. & Obst.

During the past ten years O'Connor has performed 214 arthrotomies, the majority being for recalcitrant cases of acute "rheumatic" arthritis and the mortality has been *nil*, there has not been a case of septic infection, in not a single instance has a valvular lesion developed after operation, and the treatment has afforded uniformly good results.

Acute rheumatism being primarily a joint affection due to some pathogenic germ (streptococcus) conveyed by the blood from an affected tonsil, decayed teeth, or some lesion in the intestinal mucous membrane, he believes we should adopt the simple and definite term streptococcic arthritis.

He makes it a rule to operate on cases which do not promptly yield to medical treatment. All infected joints are opened, flaky turbid lymph is evacuated, the parts irrigated with warm water, drainage tubes inserted and retained *in situ* for three days. Multiple incisions are made into areas of periarticular cellulitis and hot fomentations applied. Splints are employed for immobilization purposes for from seven to ten days, at the end of which time the patient is requested to commence graduated active movement. When wounds are healed gentle massage is prescribed. DONALD C. BALFOUR.

**Young, J. K.: Conservative Treatment of Hip-Joint Disease.** *Penn. M. J.*, 1914, xvii, 813.  
By Surg., Gynec. & Obst.

Conservative treatment of hip-joint disease gives the best possible results. The most radical methods were in vogue in Germany, in 1879, where many needless hip excisions were done. Skillful and modern laboratory methods of diagnosis have forced conservatism by proving that many incorrect diagnoses have been made. The author, in the last 30 years, in the examination of about six thousand cases, has found that correct diagnosis is based

upon the individual characteristics of each case; e. g., in hip disease such factors as pain, induration, lameness, limitation of motion, glandular enlargement, lengthening or shortening, atrophy, abscess formation, and general physical condition, make the diagnosis. Hip-joint disease must be differentiated from such diseases as trauma to soft parts, fractures in and about the hip-joint, coxa vara and coxa valgus, synovitis, septic synovitis, arthritis deformans, osteomyelitis of the femur and ileum, lesions of the fifth lumbar, sacro-iliac displacement and sacro-iliac disease, and malignancy of the hip.

Incorrect diagnosis with inapplicable treatment accounts for the many failures. Treatment consists in fixation with continuous traction and the prevention of rotation by fixing the foot as well as the leg and joint. Two to five years is required for successful results.

H. W. MALTBY.

**Connell, R.: Two Cases of Schlatter's Sprain.** *Practitioner*, Lond., 1914, xciii, 146.

By Surg., Gynec. & Obst.

The author briefly defines and describes "Schlatter's sprain," and reports two cases describing the plates and mode of treatment.

Schlatter's sprain is a partial or complete separation of the anterior tubercle of the tibia, with or without rupture of some of the fibers of the quadriceps extensor ligament or even of the joint capsule.

The cause is usually excessive muscular exertion, or strain, or in a slight degree, direct injury. He reports the following cases, both boys of seventeen.

The first boy was injured by a vaulting horse and was thought at first to have fractured his patella, but the plate showed separation of the tibial tubercle. Operation showed a tear of the capsule of the joint and showed the tubercle completely separated. The capsule of the joint was sutured, and the tubercle nailed to the tibia, following which there was a complete recovery.

The second boy was injured the same as the first. X-ray showed only a crack or slight separation of the tubercle. A posterior splint relieved all pain and recovery was uneventful.

The sprain is most common below the age of 17 and its occurrence is favored by incomplete union of the tubercle to the tibia. C. C. CHATTERTON.

**Lehmann, A.: Hysterical Contractures** (Beitrag zum Kapitel "hysterische Contracturen"). *Zentralbl. f. chir. u. mech. Orthop.*, Berl., 1914, viii, 131.  
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Contractures without demonstrable objective symptoms naturally arouse a suspicion of hysteria. Two cases are reported and the important differential diagnostic symptoms discussed. Contracture of the leg in extension with plantar flexion of the foot is the most frequent position in hysteria. Frequently, however, contractures of the hip and knee-joint in flexion are observed. It is characteristic that the pain is localized outside the joint in the soft parts and that the muscle tension stops



when the attention of the patient is distracted. In some cases there is redness and swelling around the joint, and in long-continued cases there may even be moderate muscular atrophy. A correct diagnosis can almost always be made from the contrast between the severity of the subjective and the mildness of the objective symptoms and the results of suggestive therapy.

DUNCKER.

**Hertzler, A. E., and Gibson, E. T.: Melanoblastomas of the Foot: Chromatophoroma, Melanoma, Melanosarcoma.** *Ann. Surg., Phila.*, 1914, lx, 88. By Surg., Gynec. & Obst.

The authors report, with histological findings, eleven cases of their own of tumor of the foot, and sixteen others from the literature, all of which followed similar clinical courses but in the past have been grouped differently histologically.

They describe the tumors as being either ulcerous or fungoid, occurring usually on the sole of the foot, sometimes on the ankle, and rarely upon the dorsum. They grow slowly, tend persistently to recur if excised, and metastasize by the lymphatics forming secondary tumors along the lymph-vessels as well as in the nodes of the groins. Later, they may be disseminated by way of the blood-vessels into the lungs, liver, skin, and other organs. They originate apparently from groups of subepithelial cells resembling the embryonal cells common in moles. These cells form pseudo-alveoli and also infiltrate widely. Some of the tumors are frankly melanotic. Some which have the same histological structure and similar histories contain no pigment; some, similar in other respects, have pigment in the primary tumor but none in the secondary or *vice versa*. In one case, at least, the tumor appeared free of pigment and yet the urine, clear when voided, yielded a black pigment in the presence of oxidizing agents.

These tumors usually occur at an advanced age. The duration of the disease from the beginning of active growth until the termination is usually two to six years. There is a striking disposition to local recurrence. The physical appearance is very variable, from small excoriated ulcers, not unlike other ulceration, to large angry-looking fungoid pigmented masses. These tumors are among the most fatal, but in some very early cases cure is possible. Theoretically, local treatment, if done early, would cure them, but there is never any assurance that the tumor is localized. The superficial lymph-glands of the groin should be excised. Local excision should suffice but there is nothing in literature to justify this; but if dissemination has occurred, amputation will avail nothing. When the glands along the line of vessels are involved any operation is useless.

LLOYD T. BROWN.

#### FRACTURES AND DISLOCATIONS

**Hanan, J. T.: Sliding Splint of Plaster of Paris for Fractured Femur.** *Surg., Gynec. & Obst.*, 1914, xix, 117. By Surg., Gynec. & Obst.

This splint is made by uniting an ordinary plaster cast of the leg to one of the thigh by a well vaselined

wooden slide, having side extensions to prevent rotation of the leg. This splint is applied posteriorly and held in place above and below by eight or ten turns of a plaster bandage. The then completed casts are cut along the inner and outer sides, making anterior and posterior splints. This allows, by simply lifting off the top layer, a free inspection and dressing of the entire part.

Plaster of Paris, not adhering to lubricated surfaces, allows the above wooden slide to play freely in sockets of its own making and permits a free extension of the lower fragment by Buck's traction straps in the same plane as the thigh.

Its advantages over other forms of splint apparatus are, the ease of inspection and dressings, the accurate fitting of individual extremities, always best done by plaster of Paris, the avoidance of coaptation splints, bandages, and sliding tracks for extension, its cheapness and simplicity. The easily fashioned slide and the plaster bandages are the only essential parts required for any splint, except a knowledge of a good bandage and a familiarity with its use.

#### SURGERY OF THE BONES, JOINTS, ETC.

**Edington, G. H.: The Operative Treatment of Fractures, with Special Reference to Plating.** *Glasgow M. J.*, 1914, lxxii, 20.

By Surg., Gynec. & Obst.

Operative treatment in fracture of the long bones and its success depend upon certain factors.

Favorable factors are that a more perfect apposition is given with much less deformity and, primarily, the plates are thought to stimulate osteogenesis. The unfavorable factors are: (1) Danger of sepsis, which, if present, contra-indicates the use of plates or, occurring after plating, requires immediate removal. (2) Nails or screws remain firm to a varying degree, and when once loose necrosis occurs rapidly, usually followed by persistent sinuses, which cease only upon removal of the plate, screws, and the necrotic material.

Fractures have occurred about necrotic nail-holes. Plates remaining after union takes place retard osteogenesis.

The conclusions are that in simple fracture plating should be done within a few days after the injury; in compound fracture it is best to wait for at least one week. The plates should be removed when union has taken place. Careful immobilization is necessary to successful plating. Wire used for coapting fractures causes little late trouble.

H. W. MALTBY.

**Colt, G. H.: Three Cases of Fracture in the Neighborhood of Joints Treated by Plating.** *Brit. M. J.*, 1914, ii, 4.

By Surg., Gynec. & Obst.

The author gives a detailed description, with X-ray plates, of three cases of joint fractures, two of which were compound; all three were treated with internal splinting, satisfactory results following.

The first case was a T-shaped fracture of the



humerus with the upright part extending into the elbow-joint and marked displacement of the fragments.

The second was a compound fracture of both bones of the leg two inches above the ankle-joint.

The third case was a compound comminuted fracture of the tibia, one and one-half inches above the ankle-joint, and a simple comminuted fracture of the fibula at the same level.

The Lane technique was used with a slight modification.

ROBERT B. COFIELD.

**Bird, F. D.: Reduction of Old Elbow Dislocations by Operation.** *Brit. M. J.*, 1914, ii, 14.

By Surg., Gynec. & Obst.

The author describes an operation he used on an elbow dislocation of three months' duration. A rounded flap of skin was turned down, as in suturing a fractured olecranon. The olecranon was divided, just above its junction with the shaft, with heavy forceps. Freeing of the lateral tissues allowed the turning back of the olecranon. The joint was not seen then, as is usual in fresh fractures, because of some very dense tough adventitious tissue. When this was removed the trochlear surface of the humerus could be seen. By means of a large lever the bones could be forced into place. The olecranon was then sutured into place. In four days a single passive motion of flexion and extension was made, and again at the end of a week. The result, though not perfect, was excellent. Before operation the disability was great.

The point learned was that traction in an old fracture could only do harm and had no chance of consummating reduction.

LLOYD T. BROWN.

**Whitelocke, R. H. A.: Operative Treatment of Outward Dislocations of Patella.** *Brit. J. Surg.*, 1914, ii, 6.

By Surg., Gynec. & Obst.

The author describes dislocations of the patella, acute and chronic, gives case histories and treatment used, and describes in detail his operation for the cure of chronic outward dislocation of the patella.

Only two classes of dislocation of the patella, the outward and rotary, require consideration. Other dislocations accompany other conditions and the dislocation in itself is unimportant.

The causes of acute outward dislocation, are commonly, muscular action, knock-knee, loose and lax ligaments, or injury. The leg is usually found flexed with a limitation of further flexion, the patella firmly fixed in an abnormal position. Reduction is usually easy, but there is considerable damage to the capsule and ligaments. Rest, gentle pressure, and splints are used at first; later on, massage.

The author believes that the true amount of damage done is not often realized or detected and that prognosis should be guarded. He cites three cases that were operated upon, and in each the joint capsule was torn and the tissues badly lacerated. He believes the only method to repair and bring

about a normal condition is by surgical intervention. His results were most satisfactory.

The usual course of symptoms of recurrent chronic outward dislocation of the patella and its treatment with mechanical appliances is described. The operative methods of the past have been the reefing of the medial side of the capsule or the transplanting of the insertion of the patellar ligament.

The author describes in detail his operation of ingrafting the gracilis tendon into the patella ligament.

An incision is made over the inner side of the knee, the gracilis tendon found under the sartorius muscle, a slit is made in the patella tendon and the gracilis tendon sutured there and the wound closed. A splint is worn for about two weeks until all tissues are firmly united.

The author has used this operation in nine cases and has found that it gave satisfactory results.

C. C. CHATTERTON.

**Von Baeyer, H.: Effect of Joint-Extension** (*Die Wirkung der Gelenkextension*). *München. med. Wchschr.*, 1914, lxi, 577.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author gives a short historical review of the theory and practice of joint-extension. Of the factors that operate physiologically to hold the joints together, the effect of air pressure has not been taken into consideration in therapeutics. For this reason von Baeyer has undertaken to study the pressure conditions in the joint cavity and their significance in relation to extension treatment in the hip-joint.

In animal experiments the posterior extremities of anesthetized rabbits were extended for periods of three to five minutes with weights of about seven pounds. After inhibition of the circulation by pressure on the aorta, the extended and non-extended hip-joints were laid bare.

Another series of control animals were bled after the extension and then treated in the same way. In all cases there was a marked hyperæmia of the extended hip-joint, while the non-extended joint remained pale. The periarticular muscles were involved in the hyperæmia, as well as the soft parts, the joint capsule, the ligamentum teres, and the fossa of the acetabulum. The bones were sawed through and the hyperæmia was found to extend deep into the spongiosa of the head and acetabulum. This was for the most part due to the negative pressure produced by the traction on the joint-ends, which sucked the blood from the surrounding tissues after the manner of a cupping glass. The deep hyperæmia of the bones was brought about by reflex action. Clinically, therefore, joint-extension is an effective method for producing hyperæmia of the hip-joint. The reaction that takes place on the cessation of extension, the filling of the muscles with blood, is very similar to the action which takes place after active muscular work, and allows im-



portant conclusions to be drawn in regard to motion therapy in certain conditions of stasis and paralysis.

DUNCKER.

**Henze, C. W., and Mayer, L.: An Experimental Study of Silk-Tendon Plastics, with Particular Reference to the Prevention of Post-Operative Adhesions.** *Surg., Gynec. & Obst.*, 1914, xix, 10.

By Surg., Gynec. & Obst.

As a result of fifty-four operations performed upon rabbits at the surgical laboratory of Prof. Lange of Munich the authors have formed the following conclusions:

1. Adhesions in silk-tendon transplantations are best avoided, whenever practical, by running the silk and tendon end through the sheath of the paralyzed tendon. Microscopical control of numerous specimens show this to be due to a retention of the normal space between the tendon with its silk prolongation and the sheath.

2. Adhesions occur not to the silk but to the end of the transplanted muscle or tendon. Where the periosteum had been injured the adhesions were so firm as to absolutely prevent function. All artificial methods of preventing adhesions by implanting living tissues or interposing foreign bodies defeat their own ends, since they exaggerate rather than inhibit the tendency to adhesions. The one possible exception is Cargile membrane. This may for five to six weeks help slightly to prevent dense adhesions. The microscopical pictures show the comparatively loose type of tissue surrounding the membrane during this time. All operations were done upon rabbits, which have no subcutaneous fat. Therefore the typical Lange operation, which consists in drawing the tendon and silk through the subcutaneous fatty tissues, could not be included in this series.

3. The tendon shows extensive post-operative necrosis, largely owing to the tension of the silk upon it. Five to six weeks are necessary for the tendon to recover from this necrosis and ensure firm union between the silk strands and the stump of the transplanted tendon; hence the necessity of extreme overcorrection in order to reduce the tension to a minimum; hence, also, the inadvisability of allowing early function. Faradization of the operated muscle with the limb in fixation was accompanied by a tearing of the silk out of the tendon.

4. The tissue enveloping the silk strands consists of a dense fibrous tissue. It is developed essentially from the adjacent connective tissue, though the true tendon-cells and the cells of the peritendinium and tendon-sheath also contribute to its formation. The arrangement of its fibers and the degree of its development depend upon the functional demands to which it is subjected; anatomically it is not tendon. Its development, although rapid at first, is subsequently slow. The major share of the tension must for a long time be borne by the silk strands, which must be of sufficient tensile strength to bear the strain.

**McCurdy, S. L.: Tendon Transplantation and Grafting for Paralytic Deformities.** *Pittsburgh M. J.*, 1914, ii, 5. By Surg., Gynec. & Obst.

Tendon transplantation, replanting, or tendon grafting marks a great advance in orthopedic surgery and is applicable in any part of the muscular system but most useful in paralytic deformities of the feet and hands. The tendon of a live muscle transplanted into the tendon of a paralyzed muscle restores it to a functional degree of usefulness.

Entire or partial groups involved, as flexors or extensors, can be supplied by other groups. Transferred muscles cannot be educated to perform a new function; e. g., an extensor cannot be trained to perform abduction.

Success in this class of cases depends upon the surgeon's knowledge of anatomy and pathology of the deformity, absolute asepsis, sutured tendons held under moderate tension, and an overcorrection of the deformity by plaster of Paris casts from 6 to 8 weeks. Two cases are cited, one of talipes equinovarus, and one of wrist-drop, with good results in both.

H. W. MALTBY.

**Erlacher, P.: Hyperneurotization; Muscular Neurotization; Free Transplantation of Muscle—Experimental Studies** (Hyperneurotisation; muskuläre neurotisation; freie muskeltransplantation. Experimentelle Untersuchungen). *Zentralbl. f. Chir.*, 1914, xli, 625.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

On the direct implantation of a motor nerve into a muscle a functional relation between them was established. Implantation of nerves into muscles in monkeys and guinea pigs gave good functional results. Microscopically, nerve-fibers that appeared normal were demonstrated. From the thick implanted nerves fine neurofibrils had grown out, which had formed fine end-plates on the normal muscle-fibers and a peritendinous network. From this it would seem that in spastic paresis we should not rest content with simple nerve-section, but should make use of the superfluous nerves by implanting them in the paralyzed muscles.

In another extensive series of experiments on guinea pigs, muscles were freed from the underlying tissues and neurectomized or transplanted freely. In the first two or three weeks there were pronounced signs of degeneration, but here also nerve-fibers could be seen proceeding from the normal parts. In later specimens there was extensive regeneration of nerve and muscle-tissue, and the energetic regeneration of the muscles seemed to begin under the influence of the outgrowing motor nerves. The physiological function corresponded completely with the microscopical findings. Freely transplanted muscle can, therefore, under favorable trophic conditions, be restored to function, physiologically and anatomically, and a paralyzed muscle can be neurotized from a normal one.

WORTMANN.

## ORTHOPEDICS IN GENERAL

**Berndt, F.: Operative Treatment of Severe Forms of Flat-Foot** (Zur operativen Behandlung schwerster Formen von Plattfuss). *München med. Wchnschr.*, 1914, lxi, 653.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Berndt assumed that the chief hindrance to the restoration of the arch of the foot was not the displacement of the bones and their deformity from long-continued displacement, but the contraction of the peronæus and Achilles tendons, and of the ligaments on the outer edge of the foot, especially those between the calcaneus and cuboid. So, in a very severe case of old static flat-foot, he cut these tendons and ligaments and without any bone

operation was able to restore a normal arch, and by suitable after-treatment to maintain this result permanently.

REINHARDT.

**Wilms: Operative Treatment of Flat-Foot** (Operative Behandlung des Plattfusses). *XIII Kong. d. deutsche orthop. Gesellsch.*, Berl., 1914.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Wilms ankyloses the joint between the astragalus and the scaphoid by making a wedge-shaped resection from the anterior head of the astragalus and implanting it in the joint between the calcaneus and the cuboid on the external side. He demonstrated plaster casts and the impressions of the soles of severe degrees of flat-foot before and after treatment.

PELTESOHN.

## SURGERY OF THE SPINAL COLUMN AND CORD

**Davidson, A. J.: Pott's Paralysis; Restoration by Albee's Operation.** *N. Y. M. J.*, 1914, c, 174.

By Surg., Gynec. & Obst.

That paraplegia occurring during the course of tuberculous osteitis of the spine has been due to compression of the cord is not proven by clinical findings. Such factors as narrowing of the lumen of the canal; sharp angulation of the kyphos; circulatory disturbances of the cord; cold abscess between the dura and cord; invading tuberculous granulations penetrating the dura; and tubercular infiltration of the pia, and finally neuroglia involvement, are more important. Paraplegia due to compression occurs during the activity of disease. Cessation of symptoms is not due to lessened compression but to lessened activity of the process. Immobilization and rest supported by hyperextension or traction, or both, hastens recovery by fixing the spine. Casts or bed-traction fail to induce ankylosis as quickly as Albee's or Hibb's method. The graft taken from the patient's tibia if sufficiently large possesses a high degree of osteogenetic activity ankylosing the spines *en masse*.

H. W. MALTBY.

**Engelmann, G.: Rickets of the Spinal Column; with Seventy Röntgen Pictures** (Die Rachitis der Wirbelsäule; mit 70 Röntgen-Bildern). *Ztschr. f. orthop. Chir.*, 1914, xxxiv, 225.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Engelmann undertook comparative röntgenological examinations of the corpses of normal and rachitic children; he took views from above downward of the fourth cervical, third and seventh dorsal, and fourth lumbar vertebræ, and also anteroposterior and left lateral views of the whole cord. The pictures show the characteristic changes of rickets.

Normally the form and structure of the bodies, arches, and processes, as well as their length and breadth, and the contour of the epiphyseal cartilages, are constant; but in children with rickets,

in the pictures taken from above downwards, there was marked porosity in the shadows of the bodies and arches, broadening and lengthening of the cartilages between the bodies and arches, which, moreover, were irregular, jagged, and triangular in shape, and bounded by abnormally transparent zones of bone. The vertebral foramen in the dorsal vertebræ was decreased in its frontal diameter; in the lumbar segment it had the form of the heart on cards.

On the anterior pictures the normal column shows a straight course, in the lateral ones the gradual development of the three physiological curvatures. In the anteroposterior views of the rachitic cases there is a lumbar or total scoliosis to the left, with sometimes a marked compensatory curvature in the dorsal segment to the right.

In the lateral pictures there is almost always a kyphotic bend at the boundary between the dorsal and lumbar segments, or between the first and second lumbar vertebræ. There is also a dorsal compensatory lordosis, which extends farther upward into the dorsal segment with increase in extent of the process. The lordosis of the cervical and lumbar vertebræ is increased. The rachitic curvatures have more the character of abrupt angles instead of the normal gradual curve. There is a marked progression in the rachitic process in the caudal direction, in accordance with Recklinghausen's theory; the rickets in the higher segments may have recovered while that in the fourth lumbar vertebra is still in the florid stage. This is particularly shown in the condition of the cartilages. There are röntgen changes in cases that cannot yet be diagnosed clinically.

SIEVERS.

**Bailey, P.: Painless Tumors of the Spinal Cord.**

*J. Am. M. Ass.*, 1914, lxiii, 6.

By Surg., Gynec. & Obst.

Extramedullary tumors of the cord are said, by one investigator, to cause pain in only half of the



cases. In the absence of pain, however, there is always a question regarding the diagnosis, as such cases are rarely operated on unless pain is a symptom. The author first reported two cases of non-painful cord tumors in 1896. Since then similar cases have been reported.

The first case was an intramedullary sarcoma at the level of the sixth cervical to the first dorsal, which was irremovable at operation. There was paraplegia of the legs with spasticity at first, later, flaccidity and anaesthesia were present. The sarcoma was of three years' duration. There was no spontaneous pain.

The second case illustrates an intramedullary tumor in the lower cervical cord of eight years' duration in a man of 47. It was painless during the last two or three years. There was tonic spasm of all muscles of the extremities, and anaesthesia to a light touch below the distribution of the second dorsal segment. Operation showed swelling of the right half of the cord under the fifth and sixth cervical. Death resulted in a few days.

The third case presents an extramedullary tumor

at the second dorsal in a woman of 28. There was paralysis and atrophy of the legs and exaggeration of knee-jerks, but no pain. Laminectomy and removal of the tumor was followed by a slight improvement.

The fourth case in a woman of 34 was an intramedullary perithelioma at the level of the sixth to eighth dorsal. There was a gradual paralysis of the legs with disturbance of sensation. The duration of the disease was nine months, during which there was only one short attack of pain in the right abdominal region. An operation was performed in three stages. Death resulted in a few months.

The relation of trauma to cord tumor is now well established by many instances of injury to the back followed in a few months by characteristic symptoms of tumor. Contrary to previous ideas, the presence or absence of pain is not to be taken as an indication of intramedullary growth. The position to be taken is that pain may be absent in a disease which is usually painful, and the surgeon should not be deterred from doing a laminectomy for the single reason that there is no pain. W. A. CLARK.

## SURGERY OF THE NERVOUS SYSTEM

**Denk, W.: Gunshot Injuries of Nerves** (Über Schussverletzungen der Nerven). *Beitr. z. klin. Chir.*, 1914, xci, 217.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Denk reports 45 injuries of nerves observed in the hospital at Sofia: 4 of the facial, 4 of the cervical plexus, 15 of the radial, 2 of the ulnar, 3 of the median, 2 of the median and ulnar at the same time, 12 of the sciatic, and 3 of the peroneal. Generally there were injuries of the nerve alone; in some cases there were fractures—7 of the humerus, one of the femur, and 2 of the ulna. In all cases the injuries to the nerves were direct, not secondary. They were manifested clinically sometimes by paralysis, sometimes by paralysis with severe neuralgic pain, which generally appeared some time after the injury and could only be explained as the result of pressure from the scar; in one case of lesion of the median and ulnar there was no pain, but trophic ulcers appeared on the tips of the second, third, and fourth fingers.

Injuries of the sciatic were observed in 7.7 per cent of all gunshot injuries of the thigh, and it was noticeable that only the muscles supplied by the peroneal were paralyzed, even in cases where autopsy showed that there was injury of the sciatic trunk. This proves, what was already known from internal medicine, that the peroneal fibers running in the sciatic are especially vulnerable. Injuries of the peroneal did not produce much pain. The pain was the chief indication for operation; the patients often refused operation for paralysis alone. The lesions were direct and not merely the result of shock, as was shown by the permanence of the

paralysis and the fact that the track of the bullets crossed the course of the nerves; but there was very rarely a complete separation of continuity, and this is in accordance with earlier experience in the same field.

The author saw complete separation in only one case, in which there was abundant callous formation. The nerves were always found involved in thick tissue interspersed with cicatricial tissue. In 18 cases operation was performed a month to a month and a half after the injury; in only one case was the pain so severe as to force operation four weeks after the injury. In one case the operation consisted of removing the bullet, which lay in a small abscess very close to the uninjured ulnar; in 15 cases neurolysis was performed, and in two cases in the radial the scar was resected and the nerve sutured. In 13 cases transplanted fascia lata was used to ensheath the nerve, with success in all but two cases.

The immediate results were good with reference to the pain, which generally disappeared at once; in three cases there was temporary recurrence. As to the paralysis, there were no results except a slight improvement in one case of paresis of the radial, one to one and one-half months after the operation; except in three cases, in which recovery had not taken place after six months, the author was unable to ascertain the ultimate results. On the assumption that the nerves are almost always shot through without separation of continuity, the author argues for complete excision of the scar, which interferes with conduction, but says it is difficult to determine the indications for operation in some cases. F. KAYSER.

**Eden, R., and Rehn, E.: Clinical and Experimental Study of Fat Transplantation in Neurolysis and Tendolysis** (Die autoplastische Fetttransplantation zur Neurolysis und Tendolysis. Klinik und Experiment). *Arch. f. clin. Chir.*, 1914, civ, 65. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Autoplastic transplantation of fat renders valuable service in the protection of divided nerves and tendons that must be shielded from new adhesions or pressure. The author tried it in 6 cases, the histories of which are given. The fat, which is

easy to obtain, is especially adapted for padding on account of its softness; it acts only to a slight extent as a foreign body and in comparison with other tissues, such as fascia, it has the advantage of not forming adhesions with the surrounding tissues or the parts covered by it. It takes readily in infected cases and those in which the conditions are unfavorable for the nutrition of the graft. All these advantages have been clearly shown in experiments on animals, carried out by the authors and others. HOHMEIER.

## DISEASES AND SURGERY OF THE SKIN, FASCIA, APPENDAGES

**Marshall, V. F.: Autogenous Fascial Transplantation.** *Surg., Gynec. & Obst.*, 1914, xix, 114.

By Surg., Gynec. & Obst.

The author reports three cases of autogenous transplantation of fat and fascia in which the transplants were used to fill up defects following operative procedures in various regions.

The first case reported was that of a male, aged 42, who accidentally shot himself in the hand, resulting in the loss of the carpal and metacarpal bones and of the extensor tendons. Suppuration followed the primary operation, and later with exposition and suture of the tendons a fascial graft 2 by 3 inches from the thigh was transplanted to cover over the tendons and

as a substitute for the annular ligament. The result was good.

In the second case—a young woman, aged 31—a large fascial graft 3 by 4 inches was removed from the thigh and transplanted to fill a defect in the anterior abdominal wall caused by a tumor invading the structures down to the muscular walls. In this case the results were eminently satisfactory.

In the third case—a graft was taken from the thigh in the case of a corpulent patient, male, aged 50, a blacksmith, with a sliding hernia, to fill in the defect in the region of the external ring; the size of the graft was 3½ by 3½ inches. The healing in this case was also by primary intention.

## MISCELLANEOUS

### CLINICAL ENTITIES — TUMORS, ULCERS, ABSCESES, ETC.

**Giorgi, G.: Surgical Sporotrichosis** (Le sporotricosi chirurgiche). *Riv. osp.*, 1914, iv, 326.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Among the group of diseases known as mycoses, the sporotrichoses are of interest to the surgeon (sporotrichium Schenkii, 1889, Beurmani, 1903, Dori, 1906, Gougeroti, 1907, sporotrichium asteroides and indicum). The microscopical and cultural properties of all the sporotrichia are in general the same; they are thread-like, and branching and cone-shaped at the ends; they are taken into the body either directly, by rat bites, pricks with thorns, etc., or indirectly through the food. The surgical forms of sporotrichosis are: osteitis, osteo-articular processes, inflammations of the tendon sheaths, muscles, lymph-glands and lymph-vessels, sporotrichoses of the viscera, the skin, and mucous membrane.

The periosteal affections are located by preference in the tibia, the forearm, and the frontal bone; osteomyelitis generally in the tibia, the ulna, the sternum, the clavicle, and the bones of the skull. Periostitis appears in fibrous and gummatous forms; osteomyelitis in the form of abscesses or in a diffuse form. The latter form is rare and characterized by a gummatous infiltration, which leads to the destruc-

tion of bone-marrow and periosteum, so that fractures frequently take place.

Sporotrichosis of the joints resembles tuberculosis of the joints, and, like it, forms cold abscesses. Sporotrichosis of the skin appears in the form of nodules, which ulcerate, and it may be mistaken for syphilis. The diagnosis is made by the bacteriological demonstration of the sporotrichium, by Widal's agglutination method—positive in dilutions of 1:200 to 400—and by the complement-fixation reaction. The treatment consists in the administration of 2 to 4 gm. potassium iodide daily. HERHOLD.

**Mann, F. C.: The Peripheral Origin of Surgical Shock.** *Bull. Johns Hopkins Hosp.*, 1914, xxv, 205.

By Surg., Gynec. & Obst.

It occurred to the author in undertaking this study on surgical shock that despite the enormous amount of work that had been done along this line there was still no general agreement among recent writers as to the cause and nature of the condition. He found in a critical review of the literature an astounding amount of contradictory experimental data and a great number of diverse conclusions based thereon. This condition of the subject was the author's reason for undertaking the present investigation. He endeavored, first, to determine definitely what is and what is not shock; second, to



settle as nearly as possible the chief questions in dispute; third, either to correlate and harmonize the separate conclusions arrived at by the methods just described into a comprehensive theory of shock, or else to define as nearly as possible the limits of our present knowledge.

The data which the author has presented seems to justify the following conclusions:

1. It is impossible to reduce the anesthetized animal to a state of shock by any degree of sensory stimulation, provided all hemorrhage is prevented and its abdomen is not opened.

2. It has not been found possible to show that acapnia is a primary factor in the production of shock.

3. Shock is not due to disturbance of the respiration, but the respiratory center is more quickly injured than any other vital center by shock.

4. The vasomotor center is not depressed nor fatigued in shock. It is the most resistant of all the vital centers. The peripheral and untraumatized visceral arteries are constricted in shock.

5. Shock is not due to primary failure of the heart nor to involvement of the cardio-inhibitory or cardio-accelerator mechanism.

6. It is possible to produce the signs of shock by the use of excessive heat or cold.

7. The easiest and most certain method of producing shock is by exposure and traumatization of the abdominal viscera. This, judging from the literature, has been the method used by nearly all investigators of shock.

8. Shock produced by exposure and trauma of the abdominal viscera is not due alone to a paralysis of the vasomotor mechanism of the splanchnic area. This has been shown by two crucial experiments. (1) Section of the cord or splanchnic nerves does not produce shock. (2) When all the abdominal and thoracic organs are taken from the animal (Carrel), this "visceral organism" can still be kept alive for many hours, and it can digest food, excrete urine, etc.; therefore some other cause than vasomotor paralysis or inhibition is involved.

9. The cause of shock is the tremendous loss of red cells and fluid from the blood, due to the reaction of the great delicate vascular splanchnic area to irritation—an acute inflammation of the peritoneum, due to trauma and exposure to the air and changes of temperature. The great amount of this loss is apparent when it is taken into consideration that the peritoneum has an extent as great as the entire cutaneous surface of the body. The factors involved in this reaction to irritation are the same as those involved in any other local inflammatory process, and certainly do not involve the nervous system to any greater extent. The profound general effect is due to the actual loss of red cells and fluid from the circulating blood through stasis, diapedesis, exudate, endothelial changes, etc. It is to be noted that some of the classical descriptions of inflammation were made from observations on the exposed omentum and mesentery. In the course of

operations in which the abdomen has not been opened, a loss of fluid and cells from the blood occurs. But the loss is, except when great areas of subcutaneous tissue have been exposed, comparatively unimportant.

10. Certain accessory factors which help to produce the condition of shock should be mentioned. These are muscular relaxation, decrease in intra-abdominal pressure, and impaired respirations, all of which tend to decrease the amount of blood returned to the heart. The effect of chilling and the use of hot applications should be considered.

11. Degenerative changes in the cells of the central nervous system are the result and not the cause of shock. Dolley states that identical changes in the nerve-cells are produced by hemorrhage and shock.

12. General anesthesia of moderate depth prevents painful impulses from affecting the nerve-cells of the central nervous system. Nerve-blocking under such conditions is useless, so far as the prevention of shock is concerned.

13. A relatively slight decrease in blood supply may be sufficient to depress markedly the cells of the cerebral cortex. Care should, therefore, be taken to exclude this factor before ascribing such depression to inhibition.

14. The use of the word "shock" should be avoided, and instead an accurate and detailed description of the patient's condition should be given. If the term be used at all it should be applied to the condition in which, without any grossly discernible hemorrhage having occurred, the amount of circulatory fluid is greatly diminished on account of stagnation of the blood in the smaller veins and capillaries or by exudation of the fluid and cellular elements of the blood from the same.

GEORGE E. BEILBY.

#### SERA, VACCINES, AND FERMENTS

Park, W. H., and Nicoll, Jr., M.: *Experiments on the Curative Value of the Intraspinal Administration of Tetanus Antitoxin.* *J. Am. M. Ass.*, 1914, lxi, 235.

By Surg., Gynec. & Obst.

The authors have noted the failure of tetanus antitoxin as a curative measure and have tried, experimentally, on guinea pigs to devise a means by which they could get the antitoxin where it was most needed. After experimentation, they used their method on four cases with cure in all.

Experimentally, they gave guinea pigs a double lethal dose of the tetanus toxin; then 20 hours afterward, when local tetanus had developed, the antitoxin was given subcutaneously, intracardially, and intraspinaly. The best results were secured with the intraspinal injection. The same procedure was repeated and antitoxin given in the same way at the end of 10 hours; only a quarter to a tenth as much being given intraspinaly as in the other cases, and all the intraspinal cases recovered, while all the others died.

The authors suggest that a dose be given a human first, intraspinally, followed by 10,000 to 15,000 intravenously as early as possible in the course of the disease.

EUGENE CARY.

### BLOOD

**Satterlee, H. S., and Hooker, R. S.: The Use of Herudin in the Transfusion of Blood.** *J. Am. M. Ass.*, 1914, lxii, 1781. By Surg., Gynec. & Obst.

The authors believe that herudin exerts an antagonistic action on fibrin formation by the herudin combining with thromboplastin in the form of an antibody. Therefore, for experimental work, they have substituted herudin for paraffin in the transfusion of blood.

They used a 1/500 solution and coated a syringe with it just prior to use, the walls of the syringe retaining a little over 2 ccm. Experimentally it was found that the best results were obtained by coating the pipet and shoulder of the syringe with paraffin before introducing the herudin, care being taken to keep the tip free from tissue juices.

The following table bears out their results:

EXPERIMENTAL AND CLINICAL TRANSFUSION WITH HERUDIN

Case and Experiment No.	Amt. of Blood Transfused ccm.	Amount of Herudin Used mg.	Dilution of Herudin with NaCl Sol.	Time of Onset of Coagulation, Minutes	Time of Complete Coagulation, Minutes
* Exp. Transfusion 5.....	160	3	1/1,000	†	12
* Exp. Transfusion 6.....	150	3	1/1,000	†	13
* Exp. Transfusion 2.....	100	5	1/1,000	40	†
* Exp. Transfusion 7.....	150	3	1/1,000	22	†
* Exp. Transfusion 11.....	200	3	1/500	29½	33
Clin. Case 1:					
Cylinder A.....	200	3	1/500	20	†
Cylinder B.....	200	3	1/500	16	†
Clin. Case 2:					
Cylinder A.....	220	3.4	1/450	35	†
Cylinder B.....	220	3.4	1/450	30	†
Exp. Transfusion 15.....	160	3	1/500	21 <sup>5</sup> / <sub>6</sub>	†
Exp. Transfusion 17.....	150	3	1/500	28½	35
Exp. Transfusion 18.....	220	3	1/500	35	38†
Exp. Transfusion 19.....	220	3	1/500	30	38

\* In these experiments the tip of the pipet was not lined with paraffin.

† Not observed.

‡ No clot at 38.

EUGENE CARY.

### BLOOD AND LYMPH VESSELS

**Seifert, M. J.: Arteriovenous (Varicose) Aneurism of the Deep Epigastric Artery and Vein.** *Surg., Gynec. & Obst.*, 1914, xix, 59.

By Surg., Gynec. & Obst.

The author reports the first case of arteriovenous aneurism of the deep epigastric artery and vein on record. The symptoms are interesting and suggestive: The patient had been suffering dull pains in the right iliac region; the pains were more pronounced on pressure; while walking, support of this region with the hand afforded some relief; while ironing, kneeling on a chair with the right knee had a

similar effect. The patient found it easier to carry things in her left hand, although she was not left-handed. She was neurasthenic, depressed, languid, and passive in every way; was a victim of insomnia for eight years and at times would awaken at night "all stiff and bathed in sweat." She would, at the same time, have a violent palpitation and be afflicted with a nauseating vertigo. The operation consisted of extirpation of an arteriovenous aneurism of the deep epigastric artery and vein the size of a goose-egg, with the vessels above dilated to about three-fourths inch in diameter and below to about one-half inch, the entire mass being about seven inches in length. Recovery was uneventful; the patient has enjoyed perfect health ever since, now a little over three years.

This case is instructive on account of the uncommon location of the varicose aneurism, the symptoms that baffled some of the best observers, the outcome of the operation, its occurrence in a woman and without a history of traumatism other than instrumental delivery while in labor, and because it is the only case of the kind on record, a thorough search of the literature failing to reveal a single parallel case.

The paper concludes with the author's original etiologic theory as follows:

"*Medical problems.* Is the theory tenable that an infected blood-clot (either within the vessels, as an embolus or a thrombus, or, in the perivascular tissues, as extravasations or petechial exudations from the tissues, etc.) may form an arteriovenous aneurism by ulcerating into one or more blood-vessels? Might the increased blood-pressure incidental to labor plus the trauma of instrumental delivery have caused this condition?"

**Halsted, W. S.: A Case of Iliofemoral Aneurism, Exemplifying the Value of the Preliminary Partial Occlusion of an Artery in the Treatment of Aneurism.** *J. Am. M. Ass.*, 1914, lxiii, 207.

By Surg., Gynec. & Obst.

Halsted reports a case of iliofemoral aneurism which extended over the region of the left groin from the symphysis pubis to the anterior superior spine of the ilium and to a point 10 cm. below Poupart's ligament. The patient was a negro, male, 40 years of age, with a positive Wassermann. The left leg was enormously swollen from groin to toe and very hard. The tumor in the groin presented a great pulsating, expansile swelling.

The first operation was partial occlusion of the left external iliac artery. This was accomplished by freeing the vessel from its bed and lifting it between two tapes, between which the aluminum band was curled about it until a thrill could distinctly be felt below it; then it was tightened until the thrill was obliterated. The foot immediately became quite cold. On the fourth day the pain and swelling was much better, and the temperature and sensation were normal.

About 16 days after the first operation, excision



of the aneurism was done. At first Halsted tried to dissect out the sac but it was found necessary to compress, temporarily, the internal iliac. Just below the sac the femoral artery was divided between two ligatures and the sac dissected out from below upwards.

A difference in the temperature was noted until the fifth day. Nine days after the operation the patient is comfortable, the swelling has gone away and he has perfect use of the leg for work or walking.

EUGENE CARY.

**Goodman, C.: Arteriovenous Anastomosis of the Femoral Vessels from Impending Gangrene.**

*Ann. Surg.*, Phila., 1914, lx, 62.

By Surg., Gynec. & Obst.

Frank, in 1881, made the first attempt along this line, but successful results were not obtained until 1902 when Carrel perfected his technique for vascular anastomoses, and reported the first successful case.

Bernheim, in 1912, collected 52 cases including 6 personal cases; of this series 15 were successful, 22 were uninfluenced by the operation, and 15 deaths resulted. Of the deaths 13 died of senility and erysipelas. Thirty-two operators performed the 52 operations, and most of the cases were performed late in the course of a gangrenous process.

Coenen and Wiewiorowski, after experimental observations, deny the possibility of the complete reversal of circulation in a limb or the possibility of resuscitating a limb threatened with gangrene by arteriovenous anastomosis. Many European surgeons, in discussing the paper, agreed with Coenen.

Halsted and Vaughan state that there is but one indication for the operation; namely, traumatic destruction of a peripheral vessel. They believe that if the operation is performed in obliterating diseases of the arteries the collaterals are already occluded; that the resistance of the valves and venous thrombus must be overcome, and, further, the blood passes by way of the nearest venous collaterals and returns to the heart.

Corbett attributes failures to technical errors.

Goodman thinks that reversal of circulation is possible and is applicable in arteriosclerosis of the extremities and arterial thrombosis.

The author advocates end-to-end anastomosis. He cites as "strong presumptive evidence of its value": (1) an increase in the warmth of the part; (2) improvement of color; (3) relief of pain; (4) filling of superficial veins; (5) pulsation in veins below the anastomosis; (6) return of the part threatened with gangrene or the achial seat of gangrene to the normal.

The author cites 16 personal cases, with 6 successes. The technique is delicate and requires attention to detail; the operation should not be undertaken in the presence of sepsis or advanced gangrene.

Points to be specially observed in the technique are:

1. Isolate the vessels, ligate all small vessels; use an aneurism needle in preference to hæmostats.
2. Remove all adventitia.
3. Dry the field of operation before incising the sheath.
4. Cover the wound with a protector and then with black oriental silk.
5. Keep vessels covered with liquid petrolatum.
6. Suture with fine silk.

ISIDORE COHN.

### ELECTROLOGY

**Boggs, R. H.: X-Ray Interpretation.** *Lancet-Clin.*, 1914, cxii, 96.

By Surg., Gynec. & Obst.

The making of X-ray plates is an art and, in the hands of those who have developed it seriously, röntgenograms are made which are worthy of being compared to the work of any other artist. On the other hand, the interpretation of X-ray findings is a science pure and simple. In the best clinics the röntgenologist is a competent medical man with trained assistants and is not restricted. He is a consultant, asked for an opinion, not a picture, and he shows only such pictures as best elucidate his report.

A real röntgenologist never allows himself to see anything on the plate because of clinical symptoms, but he must know the clinical side to guide his examination so as to bring out the facts.

There is so much inaccurate X-ray work that röntgenologists, who testify as experts, are no longer surprised at any absurdity that may be deduced from a plate that to them is perfectly plain. They are constantly amazed at the assurance with which a plate that can scarcely be deciphered, or the opinion of a man without special training or experience, is offered as evidence.

The methods of making and interpreting röntgenograms of the accessory sinuses, the pituitary fossa, the chest, the alimentary canal, and other organs, are all large subjects of themselves. If it would require the examination of, say, five hundred cases of fractured elbow, and a dispassionate study of the after-results to give one experience sufficient to make his opinion valuable, it can be seen what an extensive experience and constant team-work are necessary to make one able to do röntgenological work worthy of confidence.

D. R. BOWEN.

## GYNECOLOGY

### UTERUS

**Southwick, G. R.: The Treatment of Fibroid Tumors, with a Report of One Hundred Operations.** *N. Eng., M. Gaz.*, 1914, xlix, 366.

By Surg., Gynec. & Obst.

Palpable fibroids were found by the author in five per cent of his clinical cases. For purposes of treatment, he divides them into four classes as follows:

1. Small fibroids which cause no symptoms and grow very slowly. These are most commonly subperitoneal and cause no symptoms. They require treatment only when submucous or in the cervix.

2. Fibroids of the cervix are dangerous complications of pregnancy, may cause sudden retention of urine, and are particularly liable to malignant degeneration.

3. Large fibroids usually produce symptoms, are usually subperitoneal and of long duration. Degeneration changes are late, but ten per cent finally endanger the life of the patient.

4. Submucous fibroids are most dangerous. Necrosis occurs in forty-three per cent. Bleeding is severe and persistent. They predispose to cancer of the endometrium and inflammation of the tubes and ovaries.

The relation of fibroid tumors to sterility, fertility, and pregnancy depends largely on the situation of the growth. A submucous fibroid often prevents pregnancy or causes abortion. If the placenta is retained above the fibroid, hysterectomy is necessary. Fibroids in general diminish fertility, but if pregnancy does occur, the patient, on account of the danger of complication, should be delivered in a hospital.

The menopause ushers in the periods of malignant degeneration although in many cases the growth of the tumor is checked. Ten per cent of the fibroids operated upon between 50 and 60 years are complicated by cancer, and sixty per cent of the degenerations occur after 40.

Larger fibroids are often associated with visceral and cardiac degenerations, about eleven per cent of which are dangerous to life. In a series, tabulated by Crossen, nineteen per cent of 1,815 cases would probably have caused a fatal termination from local complications or degeneration. In addition, thirty-eight per cent of 951 cases showed disturbance of the heart.

Palliative treatment consists in measures to control hæmorrhage. These consist in rest in bed, vaginal tampon, ergot, and adrenalin administered hypodermatically, thyroid tablets, and various preparations of lime. Electricity and X-ray do little more than control hæmorrhage.

Operative treatment shows a mortality of three to four per cent — three per cent in the author's series of 100 cases.

Myomectomy has only a limited field and is followed by a higher mortality and more eventful convalescence than hysterectomy. German statistics show seven per cent recurrence. Less than ten per cent bear children after myomectomy.

The author's preference is for abdominal hysterectomy leaving a little endometrium for menstruating women. In others, the cervical endometrium is removed or complete hysterectomy performed. Transplantation of ovaries is of value in preventing climacteric disturbances.

Small tumors in the fundus may be watched. For others, operation is the treatment of choice. The mortality is less than the frequency of malignancy in operated cases.

S. A. CHALFANT.

**Krönig, Gauss, Krinski, Lembcke, Wätjen, and Königsberger: Further Experience in the Non-Operative Treatment of Cancer** (Weitere Erfahrungen bei der nicht operativen Behandlung des Krebses). *Deutsche med. Wchnschr.*, 1914, xl, 740.  
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The Freiburg gynecological clinic has for over two years systematically made use of the principle of homogeneous irradiation — monochromatic rays and uniform wave impulses — in the treatment of malignant tumors. In this work the authors review their successes and failures and discuss disputed points in radiotherapy on the basis of their experience.

They first take up the question of whether röntgen rays or radio-active substances are preferable, whether certain differences are to be made in their use, or whether they should be combined. If it is assumed that the principle of homogeneous irradiation is right, then of course those rays are preferable which have the greatest capacity for penetrating the tissues.

In spite of improvements in röntgen apparatus there is still a great difference in the penetrability of the  $\gamma$ -rays of radium and mesothorium and those of röntgen rays, and the difference is in favor of the former. The authors have carried out experiments on this point. They also tried to make the röntgen rays more penetrating by changing the filter and by using different metals and different thicknesses of metal. They came to the conclusion that the question of the best filter has not yet been decided, nor has the question of secondary rays.

The by-effects observed in tissues when lead filters are used are not caused by the secondary rays from the lead, but rather by overdosage, on



account of too close distance. This close distance is not in accordance with the principle of homogeneous irradiation. They instituted experiments to determine whether such a close distance is necessary and how great the distance can be with a certain amount of mesothorium in order to get a pronounced effect on the carcinoma.

They reach the conclusion: In using mesothorium or radium for the treatment of deep-seated carcinomata the distance of the preparation from the skin should be at least 5 cm. in addition to the thickness of the filter, for the sake of obtaining monochromatic rays and uniform wave impulses. With this relatively long distance there is the danger that the strength of the dose that reaches the deep-seated tumor may be too low, so that instead of destruction there may be stimulation of the growth. The force of the impulse for the proper dosage is between 1.06 and 10.75 for different kinds of carcinoma. It should never be less than 1.06; therefore for deep-seated carcinomata amounts of mesothorium should never be used that are equivalent to less than 500 mg. radium bromide. If the distance is great enough, the injuries to the tissues that have heretofore been observed need not be feared. Histological examination shows that there is no essential difference in the biological effect of röntgen rays and mesothorium. The quotient of election between carcinoma cells and normal tissue cells with regard to  $\gamma$ -rays of mesothorium and filtered röntgen rays is so great that the normal tissue cells are injured much less easily by the rays than the carcinoma cells. The experience of the authors has shown that with either mesothorium rays or filtered röntgen rays, deep-seated carcinomata may be destroyed without material injury to the normal tissues. Their cases have been under observation now for two years. In cases that are very difficult to operate and the chances of recurrence are great, they have decided on radiotherapy in preference to operation; they particularly prefer radiotherapy to operation, when the carcinoma is readily reached by a cross-fire. If a carcinoma has been removed by operation, the patient should be given radiotherapy at intervals for at least two years to avoid recurrence. OEHLER.

**Goffe, J. R.: The Biochemical Function of the Endometrium in the Etiology of Metrorrhagia and Menorrhagia.** *N. Y. M. J.*, 1914, c, 109.  
By Surg., Gynec. & Obst.

The author reviews the work of Morawitz, Birnbaum, and others, relative to the physiological processes governing the coagulation of the blood. Strumdorf, of Goffe's clinical staff, accepting the conclusions of Christea and Denk that systemic blood remains unchanged during the menstrual period, showed conclusively that the change took place in the endometrium. He collected, at the same time and from the same patient, menstrual blood direct from the uterus in one receptacle and blood from the uterine artery in another. The

former remained fluid while the latter coagulated normally.

Goffe believes that the bleeding endometrium with autolytic disintegration of the capillary walls produces an antifibrin, the proper balance being maintained by the secretions of the corpus luteum augmented by the thyroid and other ductless glands. Therefore, in uterine hæmorrhages during adolescence or the preclimacteric period, without recognizable lesion, he condemns the curette, except for diagnosis, and is attempting to supply the deficiency in the internal secretions. WILLIAM H. CARY.

**Slemons, J. M.: The Involution of the Uterus and Its Effect upon the Nitrogen Output of the Urine.** *Bull. Johns Hopkins Hosp.*, 1914, xxv, 195.  
By Surg., Gynec. & Obst.

Slemons claims, by cases cited, that the increase of the nitrogen output in the urine during the puerperium is due to the involution of the uterus. In a previous paper the conjectural conclusion had been reached that the nitrogen content of the urine was lower during the latter part of pregnancy than in non-pregnant women; at the time of labor it had fallen below that of pregnancy; while during the puerperium it rose to such an extent as to become greater than that generally accepted as normal.

In the first one of the two cases cited, he endeavored to ascertain whether the increased nitrogen output was effected by the cesarean operation and in the second whether it was influenced by the removal of the uterus at the time of the cesarean section. The influence of lactation and anæsthesia is also discussed.

From the observance of these two cases Slemon concludes from clinical grounds that the process is due to an autolysis which breaks muscle protein down into simpler substances, which are absorbed into the circulation, and pass through the kidneys, augmenting the nitrogen output for a period of about two weeks. H. G. GARWOOD.

**Byford, H. T.: An Internal Alexander Operation.** *J. Am. M. Ass.*, 1914, lxii, 2023.  
By Surg., Gynec. & Obst.

The author briefly discusses the different methods for correcting retroversion of the uterus. All of the intra-abdominal methods recommended have either proved unreliable or have been associated with objectionable features with regard to their conception or to resulting complications. The Alexander operation is freer from these objections. In some cases the author performs this operation, closing the abdominal incision already made.

The method Byford now employs avoids intra-peritoneal complications and leaves the parts in about the same favorable condition as the Alexander operation. The method consists in making a fold near the distal end of the ligament and attaching it intra-abdominally, but extraperitoneally, near the internal ring. Its execution is so simple that a large incision is unnecessary and it requires much

less time and occasions less trauma than an added Alexander operation.

The steps are as follows: After the intra-abdominal work for other conditions has been completed, the round ligament is grasped by forceps and pulled out of the inguinal canal until it becomes taut. It is then transfixated by a needle, threaded with fine chromic catgut, at a point about a centimeter from the internal ring and again about 3 or 4 cm. from the uterine end. The thread is then tied so as to make a loop of ligament. The sides of the loop are then sutured with fine chromic or plain catgut, forming a sort of double cord. The same is done on the other side and the parts palpated to determine whether the amount of shortening has been sufficient or excessive.

The peritoneum is next separated freely from the abdominal wall low down on one side of the incision as far laterally as the internal inguinal ring. There is practically no bleeding, and by inserting a short retractor between the peritoneum and rectus muscle, the abdominal wall can be raised, and the subsequent work can be done by the aid of sight and touch. With a slender, slightly curved pair of snap forceps a puncture from without inward is made in the peritoneal membrane near the internal ring and the end of the loop of ligament is grasped and pulled through the puncture until the sutured portion of ligament is all extraperitoneal. The loop is then given a half twist on itself and, with a curved needle and permanent suture, its base is sutured to the inner surface of the abdominal wall as near the internal ring as possible without danger of puncturing the epigastric artery. The loop is then horizontally sutured along the abdominal wall.

As the suture that makes the loop is a centimeter away from the internal ring and also from the permanent attachment suture, there is a little play of the ligament at the internal ring and some elastic traction exerted by the normal attachments in the inguinal canal. This play prevents muscular atrophy. After operation, the intra-abdominal pressure will cause the raw surfaces to coapt as soon as the incision is closed. EDWARD L. CORNELL.

#### ADNEXAL AND PERIUTERINE CONDITIONS

**McMeans, J. W.: Fatty Concretions in Ovarian Dermoids.** *Am. J. Obst.*, N. Y., 1914, lxx, 33.  
By Surg., Gynec. & Obst.

The author gives a brief clinical history and describes in detail the ovarian cyst and its contents, which were shown to be fatty concretions. These concretions varied in size from a pea to a marble, were putty-like and of a uniform yellowish gray color. The cyst contained no free fluid.

A comparative examination of the lipid material in ordinary dermoids and of the concretions showed the following:

##### ORDINARY DERMOID

1. Material semifluid at 37° C.
2. Much hair intermixed.

3. Small granular fat particles.
4. Small amounts of debris.
5. Squamæ few.
6. Cholesterin (chemically).
7. Double refractile bodies present in great numbers.
8. No inflammatory cells.

##### DERMOID CONCRETIONS

1. Concretions semisolid.
2. Few hairs in concretions themselves.
3. Large fat drops.
4. Much debris of cells.
5. Squamæ many.
6. Cholesterin (chemically).
7. Double refractile bodies present.
8. Inflammatory cells.

He gives the various theories advanced to explain the formation of the concretions but draws no conclusions. He has also studied a dermoid (sebaceous) cyst of the scalp, the contents of which were similar to those of the ovarian cysts. C. H. DAVIS.

**Scudder, C. L.: Salpingitis; the Results of Treatment by the Abdominal Approach.** *Boston M. & S. J.*, 1914, clxxi, 98.

By Surg., Gynec. & Obst.

The author reports only those cases in which the result is known after several years and the report is based on 74 cases in which the result is known in 40.

The majority had gonorrhœal infection. In others it followed attempted abortion; the latter were the most seriously ill. The operation was deferred until the acute symptoms had subsided.

The advantages of the abdominal route are: The exact location of the disease can be located and carried out more safely; intestinal adhesions can be more safely separated; and the exact condition of the pelvic organs determined.

Of the 74 cases, 69 were operated upon with 3 deaths, one following a dilatation and curettage for a septic abortion. Of the 40 who reported, 39 had been operated upon. The one not operated upon who reported had not been relieved. Of the 39 operated upon 36, or 92.3 per cent, were relieved.

Four subsequent pregnancies occurred in 12 cases in which one tube, or a tube and an ovary, had been removed. No ectopic pregnancies occurred subsequent to operation.

Two cases had subsequent operations: one for persisting sinus, the other for fibroid. Incisional hernia occurred in five cases.

A complete history with report of late examinations in the 38 cases is attached. S. A. CHALFANT.

**Howell, W. H.: The Inflammations of the Female Pelvis, with Special Reference to the Subject of Drainage.** *Penn. M. J.*, 1914, xvii, 777.

By Surg., Gynec. & Obst.

The author wishes to emphasize the following facts:



1. The "let alone" policy in acute pelvic inflammations.

2. The dangers of the curette following septic abortions.

3. The custom of making frequent digital examinations in acute pelvic inflammations should be discouraged, one examination being sufficient.

4. The prolonged use of cold applications to the affected part is to be condemned—forty-eight hours is the proper limit.

5. A well-defined pelvic abscess should be opened and drained, preferably *per vaginam*.

6. By making careful microscopic examinations of stained films of the peritoneal exudate at the time of operation, it can be foretold, with considerable accuracy, whether the patient will get well or not. Also, by this procedure, the surgeon may gain knowledge that will assist very materially in deciding the question of drainage. HARVEY B. MATTHEWS.

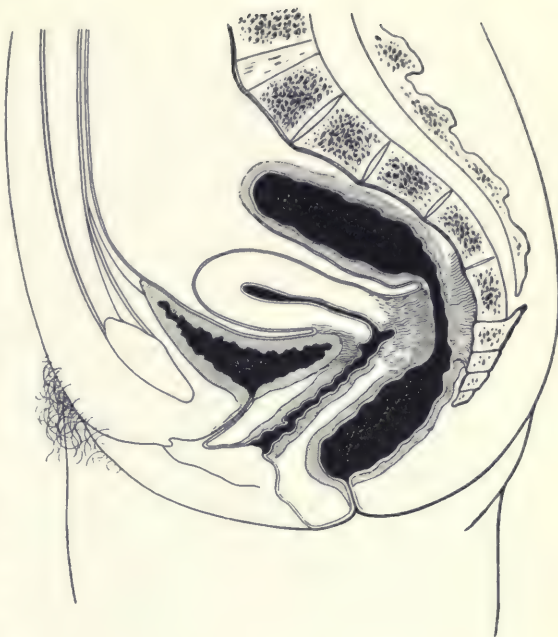
**Fiolle, J., and Fiolle, P.: Peri-Metro-Rectal Fibrosis** (Les fibroses péri-méto-rectales). *J. de chir.*, 1914, xii, 575. By Surg., Gynec. & Obst.

Inflammations of the internal female genital organs sometimes recover spontaneously with the production of fibrous tissue. This fibrosis may proceed to such a degree as to strangulate the rectum more or less completely after the lesions of the uterus and adnexa are completely well. The condition is rare. In 1911 only 38 cases had been published, but there are doubtless many cases that are never diagnosed. Most of the cases are in women from 40 to 55 years of age.

Any affection of the internal genital organs may cause this fibrosis, but in the great majority of cases it is due to puerperal or gonorrhœal infection; other causes, such as fibromata, uterine displacements, tubercular peritonitis, infections of the walls of the pelvis, and abscess of the recto-vaginal septum, are of secondary importance.

The fibrous tissue predominates generally in the uterorectal space. The posterior surface of the uterus and the anterior surface of the rectum are especially involved; but it is not unusual to find sclerosis infiltrating the vaginal wall, and the space between the rectum and the sacrum may also be involved. The location may be at varying heights, but is most frequent at about the fourth sacral vertebra. The area of fibrous tissue may be variable in form—narrow bands, semicircular, or in large irregular masses. It is typical scar tissue, plastic in recent cases, later becoming hard and woody. It has been claimed that the walls of the rectum are not involved, but the authors have not found this to be the case. The muscular part of the wall is involved but not the mucous membrane.

There is a history of genital infection. Functional symptoms do not appear until the rectum is considerably retracted and the genital lesion has probably recovered. The first sign is constipation alternating with diarrhœa, which follows any decrease in the caliber of the intestinal tract. There



Example of low peri-metro-rectal fibrosis (author's own case). The muscular wall of the rectum is invaded, but the mucous membrane is intact. Douglas' cul-de-sac has disappeared at the level of the stenosis.

is pain in the rectum with an intense desire to defecate without the ability to pass either fœces or gas. The abdomen is distended and sensitive, and there is pain throughout the course of the colon, sometimes localized in the descending colon or splenic flexure. The stools are changed in form, varying with the anatomical form of the stenosis; sometimes they are soft or even liquid. There are gastric symptoms of such severity that cancer of the stomach is sometimes diagnosed. There is also general emaciation, yellowish tint to the skin, asthenia and fœtid odor of the breath, which tend to confirm that diagnosis. There may be dysmenorrhœa and difficulty in sexual relations. Abdominal palpation does not give much information. Rectal or combined rectal and vaginal palpation is most valuable, showing the seat of the stricture, its form and degree, the height to which it extends, its consistency, the condition of the walls, and the degree of sensitiveness. The tube is arrested if an attempt is made to give enemas. Rectoscopy is indicated only in very high strictures. The development of the condition is ordinarily very slow, and the complications most often encountered are acute or chronic obstruction and tuberculosis.

The prognosis is grave. The patients generally do not present themselves for treatment until the disease has advanced to such a degree that the general condition is very poor and often the stenosis

does not yield to simple treatment, such as hysterectomy.

The difficulty of diagnosing the condition is explained by its rarity and the fact that its symptoms are common to so many diseases. In order to make the diagnosis it is necessary to have in mind the possibility of such a condition. It is necessary to make a differential diagnosis from cancer of the rectum, cancer of the uterus, cancer of the stomach, and true stricture of the rectum. Rectal tumors bleed, while in fibrosis there is no bleeding, unless it be from hæmorrhoids. In fibrosis the mucous membrane is intact, while in cancer it is not. Cancers of the cervix are easily recognized and those of the body cause frequent hæmorrhage. Moreover, cancer of the uterus causes a much more rapid decline of the general condition than fibrosis. Nevertheless, the differential diagnosis is difficult, and sometimes doubtful, even after the abdomen is opened. In differentiating from cancer of the stomach radioscapy does not show pyloric stenosis; there is no hæmatemesis, nor mælena, and no epigastric tumor. True strictures of the rectum are generally lower down and more regular in form. The genital organs are normal and the posterior vaginal wall and uterus are movable on the rectum.

The medical treatment consists in treatment at hot springs and in injection of fibrolysin. There are several methods of surgical treatment: (1) dilatation and massage; (2) hysterectomy and abdominal liberation; (3) vaginal section of bands; (4) posterior liberation of the rectum by a coccyperineal incision; (5) artificial anus; (6) rectosigmoid anastomosis; and (7) resection of the retracted zone. The latter operation is long, difficult, and serious, and the authors do not think it logical.

Two cases are described as follows:

The first case was that of a woman of 52 with a history of a tear of the cervix at her last delivery, followed by metritis. Peri-metro-rectal fibrosis developed. Hysterectomy proved insufficient and was followed by vaginal section of fibrous bands. This was followed up by dilatation, massage, and injection of fibrolysin, in spite of which there was recurrence. An artificial anus was established. The second case was a woman of 38, who had had peri-metritis with an abscess of Douglas' pouch. Several years later peri-metro-rectal fibrosis with intestinal occlusion developed. An iliac anus was established on the left side, and afterward a rectosigmoid anastomosis was made through a coccyperineal incision.

If peri-metro-rectal fibrosis is diagnosed early, before strangulation is very pronounced, it may be treated by a sojourn at some hot springs, injections of fibrolysin, dilatation, and massage. In ordinary cases, that is to say, where the stricture is causing some difficulty, the operation indicated is removal of the uterus and adnexa with decortication of the rectum. Before undertaking it, however, the operator should be sure it is possible to carry it out.

If the block of tissue is fixed, immovable, and hard as cartilage, it is best not to attempt it. This can often be determined only on laparotomy. If hysterectomy is possible but insufficient, it may be followed by dilatation, injection of fibrolysin, etc. With or without hysterectomy bands may often be cut through the vagina. This is particularly useful as a supplementary procedure after abdominal removal of the uterus. Posterior liberation is very rarely indicated—in the first place because it is more logical to go directly to the cause of the fibrosis, the uterus, and in the second place because only the lower part of the rectum can be reached in this way. The severity of the operation is out of proportion to the results to be hoped for from it. In cases of fibrosis ending in acute occlusion it is necessary to act quickly, and the operation must not be a severe one. The establishment of an iliac anus is the only possibility, preferably on the left side. This is only a temporary resource. When the patient gets better she generally demands another operation. Hysterectomy is the operation of choice if possible; if not, rectosigmoid anastomosis. A. Goss.

#### EXTERNAL GENITALIA

**Curtis, A. H.: On the Pathology and Treatment of Chronic Leucorrhœa.** *Surg., Gynec. & Obst.*, 1914, xix, 25. By *Surg., Gynec. & Obst.*

As the result of clinical observation and painstaking bacteriological study Curtis believes that purulent discharges usually form in the lower genital tract and that excessive mucous secretion from the cervix favors their development. The uterus tends to remain free from infection.

The cause of purulent leucorrhœa appears to be a condition of decreased local vitality with associated low-grade infection, in which anaërobic bacteria play a prominent part.

In treatment, the need of general hygienic measures and care of pelvic complications is emphasized. Curettement of the uterine cavity, frequent douches, and tampons are probably harmful. Destruction of the cervical glands or amputation of the cervix may be necessary to stop excessive mucous secretion.

Autogenous vaccines, notably those containing anaërobic bacteria, were used in a large number of cases. Powder treatment was also employed. Treatment that yielded the highest percentage of successful results consisted in the use of autogenous vaccines and dry cleansing of the vagina, together with applications of powder.

**Hamburger, R.: Vaccine Treatment of Gonorrhœa in Children** (Zur Vaccinebehandlung der kindlichen Gonorrhœe). *Deutsche med. Wchnschr.*, 1914, xl, 759.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

The author reports his observations on 21 children with vulvovaginitis, most of whom had been treated locally for some time. Six to ten injections were given to a patient at intervals of 4 to 5 days—



dose 0.1 to 1.0. Mixtures of several strains of bacteria gave the strongest reactions. The symptoms were threatening on intravenous injection. Intramuscular injections were borne better. The reaction was specific; there was increased discharge, involvement of the adnexa, and marked focal reaction of the peritoneum. A type of fever is described.

The conclusions are: Vaccine treatment alone will not cure vulvovaginitis in children; it is not even a supplement to local treatment. ROMEICK.

**Dickinson, R. L.: Primary Perineorrhaphy by Buried and Subsurface Catgut Suture.** *N. Y. M. J.*, 1914, c, 157. By Surg., Gynec. & Obst

A report is made of 57 cases of recent perineal injury of various degrees, operated upon at the Brooklyn Hospital by the buried catgut suture method. In each instance primary union resulted, whether interrupted stitches were closed over by running intercutaneous lacing, or whether a single strand ran as a continuous tier suturing and the two ends came together, one submucous, the other subcuticular, the whole secured by one deep knot and one hidden surface knot.

The advantages of layer suture in pelvic floor injuries are shown to be the minimizing of observation on sponging or the pulling out of stitches from a surface especially sensitive and inaccessible; the almost immediate disappearance of the wound; freedom from dressing and skin drag; skin comfort and skin dryness; and notable swiftness of union.

Plain catgut No. 1 does well for lesser tears and may suffice for all. Chromic gut No. 1 was used in two-thirds of the cases reported. In layer work this is sometimes used doubled. For doubled chromic continuous suture No. 0 is large enough, and even for the single-tier suture one thread twenty to twenty-four inches is cut, but only three to six inches are used. Two Mayo needles, needle-holder, scissors, and thumb forceps are needed.

The three methods found to work well are: (1) interrupted buried stitches, either circular in sweep or of figure-8 form; (2) continuous layer catgut, in two or three tiers, the last being subsurface, the work being done, generally, with one strand, the larger bights being locked by the buttonhole form of stitch; (3) the figure-8, continuous, center locking, the same strand going on to make the subsurface closure. Any choice or combination of the methods may be used. All three methods are described in detail and fully illustrated.

A tabulation of the cases reported shows that the operations were done both by the expert and by the resident, who changes every three months. Some were complete lacerations; some perineotomies on

primiparæ. The ordinary wound, after the first few hours, is practically invisible. When they are extensive the repairs are done from the second to the fourth day. This insures a better study of the anatomy and a fresher operator, with a field less distorted and no bleeding to obscure it. In many instances the histories stated that days, or weeks, or months after operation no scar could be found.

Application of the method is made to the levator suture; anterior injuries; slits in the labia minora; to complete lacerations; and to cervix repairs done from the second to the tenth day post-partum.

## MISCELLANEOUS

**Lupnoff, A.: External Migration of the Ovum from One Side to the Other** (Die äussere Überwanderung des Eies). *Sibirsk. Vrach*, 1914, 263. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In exceptional cases there is maturation and rupturing of a follicle during the first months of pregnancy; but as a rule ovulation stops with the beginning of pregnancy. At the site of the ruptured follicle a true corpus luteum develops that increases in size until the fourth month of pregnancy and sometimes disappears toward the end of pregnancy, or more frequently still persists after the end of pregnancy. In view of these facts, it is possible in many cases to say with certainty whether the ovum has migrated through its own tube or that of the opposite side.

Hofmeier, Leopold, Martin, Sippel, and others have shown experimentally that the external migration of the ovum from one side to the other is possible. Several ova even may complete this migration. It is favored by displacement of the pelvic organs from inflammatory processes, tumors, and any variations in the form of the organs of the true pelvis. The closure of its own tube, the loss of the epithelium, and the lack of the normal stream of serous fluid in the tube may also be regarded as causative factors.

Whether, as Hasse asserts, external migration may take place without any pathological changes is hard to decide, and proof is as yet lacking. Frequently external migration takes place in extra-uterine pregnancy; it is possible that it is a factor in causing extra-uterine pregnancy. On the other hand, external migration makes pregnancy possible in women who have lost the ovary of one side and the tube of the other.

Winkler describes a case in which a woman whose right tube and left ovary had been removed had two normal deliveries and died during the third normal pregnancy. This fact is only to be explained by external migration. WAEBER.

# OBSTETRICS

## PREGNANCY AND ITS COMPLICATIONS

Davis, E. P.: *The Treatment of Placenta Prævia*.  
*J. Am. M. Ass.*, 1914, lxiii, 290.

By Surg., Gynec. & Obst.

In the treatment of placenta prævia, the two following important factors must be kept in mind: (1) Any vaginal hæmorrhage in a pregnant woman is a symptom of danger and must not be neglected. Because hæmorrhage from placenta prævia is accompanied by no pain it is frequently neglected by patients. (2) In dealing with these cases, the danger of infection must be kept prominently in view. Vaginal examinations and manipulations must be as infrequent as possible, and the use of the tampon should be avoided.

In incomplete placenta prævia, the best treatment, in the hands of the general practitioner and in private houses, is to rupture the membranes as extensively as possible, when dilatation permits this procedure. Tonic doses of strychnine are given and the patient is allowed to deliver herself, or, at least, to force the presenting part down to the vulva before artificial delivery is undertaken. In this way hæmorrhage and infection will be reduced to a minimum and, although the risk to the child is great, the mother's safety should be considered first.

In complete placenta prævia, under the same circumstances, the Braxton-Hicks method of bringing down the leg and breech of the child as a plug should give the mother the best chance. The placenta must be perforated by one or two fingers, combined version performed, and the leg seized and drawn through the placenta. Only sufficient traction should be made to bring the breech firmly into the pelvic cavity and against the cervix and placenta, and, under no circumstances, should forcible and immediate extraction be practiced. The life of the child should be disregarded in the interests of the mother. If a constant tension on the child is desired, a noose of bandage should be slipped about the infant's ankle and a moderate weight attached. The mother may then be stimulated as required, care being taken to avoid the use of ergot and pituitary extract. The mother demands constant observation until labor finally develops, and the fœtus, if possible, is expelled spontaneously. In placenta prævia the practitioner must expect and be forewarned against post-partum bleeding. The delivery of the child should be followed by the delivery of the placenta, irrigation of the uterus with a hot 1 per cent dilution of liquor cresolis compositus or normal salt solution, and firm packing of the uterus, cervix, and vagina with 10

per cent iodoform gauze. If the cervix is torn, immediate suture may be necessary.

In hospital practice, with the mother in good condition and the membranes available for rupture, the escape of the amniotic liquid may be followed by the introduction of a dilating bag through the rent in the membranes into the cavity of the amnion. This should be gradually distended to its fullest extent, securing dilatation of the cervix with pressure on the placenta. With dilatation sufficiently advanced, the child may be delivered by forceps with a minimum risk to the mother and great reduction in fœtal mortality. When the membranes are not available for rupture and when the cervix is resisting, because in a primipara it is poorly developed, or because in a multipara it has been altered by scar tissue from previous confinement, the best result will be obtained for the mother and child by prompt resort to abdominal cæsarean section. If the child is premature, dying or dead, from long-continued maternal hæmorrhage, the placenta may be perforated by the fingers and combined version practiced. The child's body is used as a plug. If the child be living and in good condition, the cervix soft and dilatable, the head presenting, and the patient in the hospital, the obstetrician may elect to pierce the placenta and insert a dilating bag through it within the cavity of the amnion. With good dilatation, the use of the forceps will sometimes secure a living child. In hospital practice, however, where the child is fully viable, the best results for both mother and child will be obtained by abdominal cæsarean section. At full-term in hospital cases, whether the child be living or dead, the mother will obtain her best chance for recovery by the same method.

The author's experience in abdominal cæsarean section for placenta prævia comprises seventeen cases. In these the membranes were not available and the placenta practically covered the entire internal os. In some of these patients the child was dead or dying and the mother exsanguinated. All were at or near term. During the operation the patients received intravenous saline transfusion, and strychnine, digitalone, and atropine were given hypodermatically. In exsanguinated cases, the patients were kept in the Trendelenburg posture until reaction occurred; external heat, rectal injection of stimulants, and oxygen inhalation were used with success.

Of the seventeen patients, three were especially exsanguinated through severe and repeated hæmorrhages. All the mothers recovered. The fœtal mortality was 40 per cent. There was no maternal



morbidity except slow recovery incident to severe anæmia. Infection did not develop.

EDWARD L. CORNELL.

**Rongy, A. J.: Treatment of the Toxæmias of Pregnancy.** *J. Am. M. Ass.*, 1914, lxi, 158.

By Surg., Gynec. & Obst.

The primary purpose of the paper is to point out the very important fact that the toxæmias of pregnancy cannot always be treated by either the radical or the conservative method, and that the clinical varieties of eclampsia are such that no one method is applicable to all. While the author believes that the uterus should be emptied in all cases of eclampsia, still each case must be individualized in order that the proper procedure may be adopted. Finally, he believes that if an active campaign of education were to be instituted among the physicians as well as the public, and attention called to the fact that there is present a definite præeclamptic stage and that there are premonitory symptoms in pernicious vomiting of pregnancy, the mortality and morbidity of the various toxæmias could be greatly reduced or even entirely eliminated.

The author has used placental serum in the treatment of four cases of pernicious vomiting and three cases of threatened eclampsia. The advantage of this treatment is that if improvement is to take place, it is usually noticed very early, and if after a trial of from thirty-six to forty-eight hours, the patient fails to show signs of improvement, it should be discontinued. Six of the seven cases are briefly reported. One of these died from the effects of erysipelas, while the others recovered.

In the treatment of eclampsia, the method usually adopted depended on the period of gestation and the rapidity with which the delivery had to be terminated, as evidenced by the clinical signs and symptoms. In cases in which labor had already set in, delivery was usually completed by manual dilatation, or by dilating bags, followed by forceps or breech extraction. Patients in whom the toxæmia was apparently mild, having absolutely lucid intervals between convulsions, and in whom the pulse rate was not affected to any degree, were treated by the catheter or dilating bags, in order to have labor set in. Patients in whom eclampsia occurred before the seventh month, with severe toxæmia, were delivered by Dührssen incisions. Delivery by vaginal cæsarean section was adopted in all eclamptic patients not in labor, with long and rigid os during the seventh and early part of the eighth months of gestation. Abdominal cæsarean section was performed during the last four or five weeks of pregnancy in primiparæ having severe toxæmia, not in labor, with long and rigid cervix. Vaginal cæsarean section, in these cases, should never be the operation of choice, for many obstacles may be encountered which complicate the operation and endanger the life of the child. The medicinal treatment used for controlling convulsions consisted in large doses of the fluid extract of veratrum viride

associated with small doses of nitroglycerine. Morphine in large doses was used in patients who were restless between attacks. If the convulsive seizure was severe and seemed to exhaust the patient, ether was administered. None of these drugs seemed to exert any specific action. Venesection was resorted to in plethoric patients with high blood-pressure.

EDWARD L. CORNELL.

**Ill, E. J.: The Treatment of Albuminuria in Pregnancy.** *J. Am. M. Ass.*, 1914, lxi, 157.

By Surg., Gynec. & Obst.

While laboratory methods of diagnosis are all-important and must not be lost sight of, the clinical picture and bedside symptoms must ever be the guide for action. The albuminuric patients who come early in their pregnancy and are discovered early, rarely give much trouble. The explosive cases are much to be feared. The former readily respond to diet, hot packs, and purgations, especially when the subjective symptoms are mild, the percentage of urea normal or nearly so, the quantity of albumin little, the skin active, and the blood-pressure not excessive. The latter patients need heroic treatment.

The author's treatment may be summarized as follows:

1. A primipara who presents albuminuria of slight or moderate degree, with few or no kidney elements and no uræmic symptoms at a time before the viability of the child, should have close observation and a salt-free and restricted diet, with an occasional calomel purge.

2. In a primipara, the child not yet being viable, with much albuminuria and many kidney elements, reduced quantity of urea and urine, but still no uræmic symptoms, a more serious problem is confronted, for uræmic symptoms and high blood-pressure may supervene at any time. Calomel purges, with a more restricted diet of milk and green vegetables, rest in bed, and constant observation is the treatment employed.

3. In a primipara, the child being viable, in whom there is an increasing and severe albuminuria and many uræmic symptoms, as shown by blindness, headache, convulsions, or even coma, a very dangerous condition is present. If convulsions have not set in and absolute rest, calomel, lavage of the stomach and rectum, morphin-chloral, an absolute diet, and veratrum viride have had no effect in staying the severe symptoms, labor should be induced. In these cases, venesection should also be employed. Time is an important element. If early induction has not been done, convulsions and coma may supervene, thus necessitating the use of vaginal or cæsarian section.

4. When during the viability of the child there has been a gradual, though increasing, severity of the symptoms, efforts should still be made to relieve the condition by the treatment outlined above. If, however, the reverse is true, that is, the albuminuric and uræmic symptoms have come on suddenly



and with great severity, early delivery by induced labor is the treatment of choice. When convulsions have begun or there is great oedema of the retina, and headache, the classical cæsarean section has been employed by the author.

5. Cases first seen in convulsions, if there are lucid intermissions and the patient talks and acts sensibly, efforts are made to carry her along by the use of calomel and enemata, but if there is much oedema, starvation, morphine, veratrum viride, etc., the treatment is employed. When, however, there are no lucid intervals and coma is deep and lasting in spite of blood-letting, cæsarean section is performed, as the author believes that this operation offers the mother and child the best chances.

6. When a patient is brought in in convulsions and in labor with free dilatation or even retraction of the cervix, chloral, morphine, venesection, or veratrum viride followed by the forceps, give both mother and child a good chance.

In the treatment of all these cases the dangers of chloral, morphine, and veratrum viride must not be forgotten.

EDWARD L. CORNELL.

**Young, J.: The Etiology of Eclampsia and Albuminuria, and Their Relation to Accidental Hæmorrhage.** *Proc. Roy. Soc. Med.*, 1914. vii, *Obst. & Gynec. Sect.*, 307. By Surg., Gynec. & Obst.

The investigations recorded are from the Royal College of Physicians Laboratory, Edinburgh. At first carried out along clinico-anatomical lines, they were soon merged into experimentation.

The author first considers the relation between albuminuria and eclampsia and placental disease. Infarct formation, especially of the red variety, is the first condition here to attract attention, and Young shows that in an acute toxæmia ending rapidly in labor, the placenta may present evidence of disease, or it may look perfectly normal to the naked eye. If, on the other hand, the acute attack passes off and labor only supervenes, extensive recent necrosis is found. This suggests that it is the recent autolytic changes in the affected organ that generate the poison. As regards infarct formation the author takes the position that the chorionic elements are dependent immediately and directly upon the maternal blood for their nourishment, and can live and flourish where the foetal blood is absent. Therefore, necrosis in the placenta will occur if the maternal blood supply is interfered with and the belief that infarction is due to an obliterating change in the vessels of the villi is rendered untenable. Far from being a loose sponge in which there is a kind of irregular mingling of the maternal blood, the placenta must be regarded as an organ where, just as in other tissues, each portion is supplied by certain maternal vessels and relies on them entirely for its nourishment.

In Young's experimental work guinea pigs were used for injection with placental extract obtained after a short period of autolysis. Following subcutaneous injection convulsive seizures were severe

and in many cases the condition was an accurate reproduction of an eclampsia. The liver changes and the more definite ones occurring in the kidney were likewise reproduced. Local necrosis in the liver with a rather diffuse fatty degeneration gave an appearance identical to those occurring in the human. These were especially marked where a glycerine extract of the placenta was injected.

The author presents the following general summary. That eclampsia and the albuminuria of pregnancy are due to the liberation of the products of early autolysis of the placenta has been established by the following considerations:

1. The toxæmias are especially associated with recent infarction of the placenta. In severe cases, ending rapidly in labor, there may be no evidence, visible to the naked eye, of placental disease. If, however, the placenta is delivered several days after the attack, massive necrosis, obviously of recent origin, is seen. It requires some time for the necrosis to evolve into visible form.

2. Placental infarction is due to an interference with the maternal blood supply of the part. It can be shown conclusively that the chorionic elements are dependent, immediately and directly, upon the maternal blood supply, and, so long as this is retained, can live even when there is no foetal supply.

3. The interference with the blood supply, which is responsible for the infarction, is not dependent upon a toxic state and, in point of fact, may occur in the most extreme form where there is no evidence of a toxæmia; e.g., accidental hæmorrhage. An examination of the placenta, wherever there is definite evidence of an involvement of the maternal supply, invariably shows disease corresponding exactly to the area of this involvement. This disease will be evident to the naked eye unless the involvement is quite recent. The study of accidental hæmorrhage was shown to be specially important in this connection.

4. The placenta is so constructed that, if a part of it die, the products liberated from the dying patch can pass directly into the blood-stream. The organ is unique in this respect. It thus follows that for the occurrence of a toxæmia, a circulation of blood around the poison-generating foci is necessary. An understanding of this fact at once dispels many of the difficulties associated with this study. It explains, for example, the cessation of symptoms after the death of the child (and separation of the placenta), and it explains the absence of a toxæmia in cases of accidental hæmorrhage — 50 per cent of the whole — in which the placenta is completely detached by the blood-clot, or by other means. The cases of accidental hæmorrhage associated with a toxæmia are those in which part of the placenta remains attached for some time after the separation of the adjacent part by a retroplacental bleeding. The necrosis of this part liberates the toxic materials.

5. Where the placental disease is gradual in its onset there is more chance of the evolution of the



infarcted patches. This explains why, in long-standing albuminurias, there may be more visible placental disease than in an acute eclampsia. It is just the gradual development of the toxæmia that allows of the pregnancy continuing.

6. These facts all suggest that the toxæmias are due to the autolytic products liberated in the early stages of the placental death. By imitating the process, which occurs *in utero*, it has been possible to isolate from the healthy placenta a material or materials of a soluble kind which reproduce the clinical features and morbid changes, which all agree are especially characteristic of eclampsia. These are (1) convulsions, (2) peripheral focal necrosis in the liver, and (3) degenerative lesions in the kidney, especially located in the convoluted tubules.

CAREY CULBERTSON.

**Chandler, T. E.: Some Practical Points in the Technique of Cæsarean Section.** *N. Eng. M. Gaz.*, 1914, xlix, 376. By Surg., Gynec. & Obst.

From a personal experience in thirty-three cæsarean sections the author mentions some practical points in the technique of this operation, and although not discussing the indications, quotes Jellett, of Dublin, to the effect that the operation of high forceps is never indicated, and that some form of section should take its place. He states briefly that the best time to perform this operation is a few hours after pains begin, if the operation is made for obstruction; if for placenta prævia, several days before term.

He divides the preparation of the patient into two steps: cleansing of the vagina and then the abdomen, the vagina being cleansed with soap and water and then with alcohol, the abdomen by the iodine method. The author uses the low incision, starting just below the umbilicus and carrying it down to a point two inches above the pubis. He claims that the resultant wound in this incision is stronger during the period of convalescence than if the incision is made above the umbilicus. After the abdomen is opened, gauze mops are used to wall off the intestines, and then the incision is made in the uterus. He advises that the incision be made in a cool deliberate way, carrying it through the uterine muscle, placenta, and membranes if necessary; the baby is then quickly delivered and the placenta and membranes freed from the uterine wall. At this stage, he advises giving ergot by hypodermic to control the bleeding, which he states very seldom gives trouble. The uterus should be handled as little as possible after the delivery of the child, because of the danger of infection. A continuous suture of No. 4 plain catgut is used to close the uterine incision and two layers are used; the first layer starting at the endometrial surface embracing two-thirds of the uterine wall, the next layer at the peritoneal surface and also embracing two-thirds of the uterine wall overlapping the first layer of sutures; the peritoneal covering being closed over these muscular sutures by a continuous suture

of No. 2 catgut. He advises removing carefully all blood-clots and amniotic fluid from the abdominal cavity because of the fact that they may give rise to stasis of the bowel and consequent distention; the abdomen is then closed in the usual manner, using catgut and silkworm gut. WILLIAM D. PHILLIPS.

**Greene, T. F.: Cæsarean Section, an Historical Review with an Analysis of Sixty Cases.** *Boston M. & S. J.*, 1914, clxxi, 177.

By Surg., Gynec. & Obst.

Greene presents an historical and statistical review of the cæsarean operation in America, England, and the Continent. The work of Harris, written some fifty years ago, is reviewed and commented upon.

The first recorded case in the United Kingdom is credited to Mary Donally, an Irish midwife, operated in 1738, near Charlemont, Ireland.

In America, Louisiana and Ohio secured the earliest favorable results. John Lambert Richmond, of Newton, Ohio, is credited with the first successful case in the United States, operating in April, 1827. At this time contractions of the uterus were depended on to approximate the edges of the uterine incision and this continued down to the early 80's. Lebas, of France, was the first to use uterine sutures in 1769.

The work of Reynolds, of Boston, and McPherson, of the New York Lying-In Hospital, are also reviewed. Reynolds showed especially favorable results in 30 cases with no mortality.

The author's record of sixty cases shows a death of one mother and no foetal mortality. The indications in his series were: Eclampsia, malposition of uterus, tubercular hip, placenta prævia, chronic heart, primiparous twin pregnancy, flat pelvis, and justo minor pelvis.

The author's conclusions may be summed up as follows: The timely operation should be performed before the mother is exhausted and infected. The cæsarean operation should be one of election, not one of last resort.

H. G. GARWOOD.

**Fruhinsholz, A., and Gross, G.: Cæsarean Section in a Case of Double Uterus; Hemihysterectomy** (Opération césarienne dans un cas d'utérus double; hémi-hysterectomie). *Ann. de gynec. et d'obst.*, 1914, xi, 230.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The patient was a 22-year-old primiparæ of short figure with relative shortness of the limbs in proportion to the body. Spines 21, crests 22.5, external conjugate 17.5, true conjugate 7.5; breech presentation. To the left above the symphysis at the lower segment of the very long uterus there was a soft tumor as large as a small mandarin, which was diagnosed as fibroma of the round ligament. As the delivery had made no progress in spite of pains of two days' duration, cæsarean section was performed on account of the contracted pelvis. The membranes ruptured at the beginning of the opera-



tion. A bicornuate uterus was found with a rudimentary left horn which had been diagnosed as a tumor of the round ligament. There was typical decidual reaction of the mucosa of this horn, which did not communicate with the pregnant half. There was no hæmatometra, which was also lacking in the history of the patient who had menstruated regularly since her thirteenth year. The rudimentary horn was removed. Recovery followed with suppuration of the superficial abdominal suture. The child lived. Later examination with the speculum showed no abnormality of the cervix and vagina. The left adnexa was normally developed.

In conclusion, the author describes three forms of rudimentary horn of the uterus: (1) pediculated rudimentary horn, with a long fibromuscular pedicle; (2) sessile rudimentary horn, with a short pedicle so that it looks like a subserous fibroma; (3) inclusive rudimentary horn, in which the cavity of the rudimentary horn is hidden in the wall of the uterus.

VASSMER.

**Gardner, W. S.: The Treatment of Abortion.** *W. Virg. M. J.*, 1914, ix, 1. By Surg., Gynec. & Obst.

The author limits his discussion to the treatment of inevitable or incomplete abortions, reviewing briefly the opinions of a number of authorities on the subject, and concludes by discussing the subject under the following headings:

*Measures employed.* Many physicians who would not think of touching an open wound on the surface of the body without employing antiseptic precautions will make vaginal examinations in abortion cases without proper preparation. The neglect of these fundamental precautions often introduces infection and converts an otherwise simple case into a complicated one.

*Dilators.* In cases where it is necessary to dilate the cervix, the author usually uses the parallel bar dilator, but says that it is very easy to split the cervix with it, so avoids using very much force; should the cervix not open easily with this method, he advises using some other means.

*The curette.* The author is of the opinion that the curette should be used in these cases because it can be thoroughly sterilized, can be used through a narrow canal, and is the only instrument that will remove small tightly adherent fragments from the uterine wall. The type of curette to be used is important: it should be broad and slightly flattened on the end; it must be sharp, but the edge must strike the uterine wall at right angles so it will scrape and not cut. In very recent cases where the cervix is well dilated the curette can be used without an anæsthetic, but he says this is very seldom advisable. After the uterus is curetted, it should be wiped out with strips of gauze. The author does not believe in the intra-uterine douche.

*The finger.* In many of the cases that have passed the third month of pregnancy and are seen early, it is quite easy to remove the uterine contents with the finger. Even in some of the cases seen later it is

possible to forcibly dilate the cervix sufficiently to introduce the finger, but the author does not believe this as safe as or as satisfactory as the use of the curette.

*Tampons.* He suggests the use of cotton tampons because of the fact that they are more impervious to blood and can be packed more firmly around the cervix. He advises that they be soaked in some form of mild antiseptic solution or sterile water and is also of the opinion that the vaginal tampon is of most value in cases in which the fœtus has not escaped.

*Posture.* In the infected cases there is no other measure that is so applicable and which yields such prompt results as the upright position of the patient. This position favors drainage and will usually be followed by a drop in the temperature.

He concludes by recommending the following treatment: (1) In cases where abortion has occurred before the third month, is incomplete and no symptoms are present, it is not necessary to do anything. (2) If hæmorrhage is present, the decidua should be removed at once. (3) When there is infection without hæmorrhage, it is best for the patient to sit up for 24 hours; if the temperature drops, wait longer; if not, and it is clear that abortion is not complete, the uterus is best emptied with the curette. Whenever there is much hæmorrhage the uterus should always be emptied at once. (4) When the infection has spread to the peritoneum, the upright position should be used and ice-bags should be applied to abdomen. Under no circumstances should the finger or curette be introduced into the uterine cavity.

WILLIAM D. PHILLIPS.

#### LABOR AND ITS COMPLICATIONS

**Long, J. W.: Rupture of the Uterus during Labor, Report of a Spontaneous Case.** *Am. J. Obst.*, N. Y., 1914, lxx, 20. By Surg., Gynec. & Obst.

The author reports a case of spontaneous rupture of the uterus in a woman, aged thirty-two, whose first pregnancy occurred after she had been married thirteen years. At the height of a uterine contraction the patient suddenly cried out, complaining of undue pain in the abdomen; she had hurried breathing for a few minutes but there was little change in the pulse. An examination showed that the head had receded. Five minutes later the placenta was expelled spontaneously. Pains ceased and the patient complained only of tenderness on palpation. Later, the child was extracted by pulling down a foot. There was little hæmorrhage or shock.

A diagnosis of ruptured uterus was made and the author called. The patient was taken in an automobile 17 miles to St. Leo's Hospital and operated upon. Through the left side of the uterus was seen a longitudinal rupture coming from deep in the cervix through the body to Brandl's or Braun's ring, which can be clearly seen in the specimen. At this point the rupture seemed to have skidded over the contraction ring and involved only the superficial tissues up to near the insertion of the round ligament.



The tear did not involve the uterine artery. The uterus was removed supravaginally, and the patient made a good recovery.

In his discussion the author gives a careful review of the literature on this subject. With many others he favors the operative treatment for complete rupture and doubtful cases of incomplete rupture. He, with a recent writer, believes many ruptures may at first be incomplete. C. H. DAVIS.

**Marchand, L.: Etiology of Breech Presentation**  
(Sur l'étiologie de la présentation du siège). *Rev. prat. d'obst. et de pédiat.*, 1914, xxvii, 65.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

From the standpoint of etiology, the author, like Pinard, distinguishes between true and accidental breech presentations, and regards the first, which is the rarer form, as a result of failure of adaptation either because the child's head is too large from hydrocephalus, or, though not pathological, it is too large in comparison with the size of the pelvis, or because the lower segment is too much developed in comparison with the upper part of the body of the uterus.

In the accidental cases, failure of adaptation in size between the head and pelvis takes place because of the smallness of the child, abnormally large quantities of liquor, flaccidity of the uterine muscles, twins, or macerated foetus, and here it depends on chance whether the child, which is freely movable on its long axis, will present the head or the breech, and be fixed in this position by the shortening of the transverse diameter of its body.

Like Wallich, the author recognizes deep insertion of the placenta as an important etiological factor. He examined for this etiological factor in 615 cases of breech presentation at the Baudelocque clinic, leaving out of account those with dead and macerated foetuses and twins, and came to the following conclusions:

Subtracting 59 cases in which the location of the placenta could not be accurately determined, he found deep insertion of the placenta was the only cause in 556 cases, and in 60, other cases it was combined with other causes: in 29 of them with malformation of the uterus; in 15 cases with contracted pelvis; in 9 with excessive quantities of liquor amnii; in 4 with fibroma; and in 1 each with hydrocephalus, excessive liquor combined with poor development of the uterus, contracted pelvis and poor development of the uterus, and contracted pelvis with excessive liquor. In 8 cases contracted pelvis, in 2 cases pelvic tumors, in 28 cases malformation of the uterus, in 8 cases excessive liquor, in 1 case hydrocephalus, and in 2 cases fibroma of the uterus, were the only causes. In the other 5 cases the different factors were combined in different ways. After subtracting the cases which showed deep-seated placenta also, the author reckoned the frequency of the different causes as follows: Malformation of the uterus, 5.6 per cent; excessive liquor, 3.9 per cent; uterine and pelvic tumors, 0.9 per cent; hydrocephalus,

only 3 cases in all; contracted pelvis, 1.8 per cent. In 114 cases he could not find any of these classical etiological factors.

In the first 524 cases 353 were breech presentations with extended legs, and only 167 complete breech presentations, 3 knee, and 2 foot presentations. He regards this position of the legs as a hindrance to spontaneous or artificial version, and among the last 114 cases, 43 primiparæ and 35 multiparæ showed this position of the legs; in these cases he regarded it as the cause of the breech presentation, together with great flaccidity of the uterine musculature in some cases. As a practical result of his experience he recommends in cases where deep insertion of the placenta is suspected, frequent examination for the position of the child toward the end of pregnancy and attempts to change it, if a breech presentation, by external manipulation. If this is impossible on account of the position of the legs, it is still possible that the legs may change position by spontaneous flexion. In complete breech presentation, he thinks it possible to produce version and fixation in the corrected position by means of bandages. VASSMER.

#### PUERPERIUM AND ITS COMPLICATIONS

**Fabre and Petzetakis: Bradycardia in the Puerperium** (Étude sur la bradycardie des suites de couches). *Arch. mens. d'obst. et de gynéc.*, 1914, iii, 353.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The authors regard bradycardia in the puerperium as a normal phenomenon, and it may even be considered favorable in non-febrile puerperæ. They used atropine to show whether the slowing of the pulse was nervous in character or due to a heart lesion, and they regard the proof as positive when the number of pulse beats rises more than ten in a minute; the same test can be made more surely and more permanently with amyl nitrite. As another means of determining the nature of the bradycardia they made use of pressure on the eyeball, which, as Ashner observed in 1908, decreases the number of pulse beats, and thus has the opposite effect from atropine and amyl nitrite.

The experiments show that bradycardia during the puerperium is influenced by change in position and effort. It is due to nervous causes—the stimulation of the vagus. The compression of the eyeball shows that the pneumogastric is also involved in these cases of bradycardia, because the heart's action is inhibited and thus the slowness of the pulse increased by it. Pressure on the eyeball has no effect as long as the patient is under the influence of atropine, but its effect is increased when pilocarpine is given. BAYER.

**Goodall, J. R.: The Treatment of Puerperal Infections.** *Canad. M. Ass. J.*, 1914, iv, 589.  
By Surg., Gynec. & Obst.

In the treatment of puerperal infections the author has departed from the more heroic forms of attack

and has adopted milder and more conservative methods, until at present a policy of total abstention from local interference is advocated. The paper consists of a general review of recent clinical experiences, case histories being freely used for illustrative purposes.

Retained membranes immediately after delivery, though not looked upon with indifference, are not considered indications for invasion of the uterine cavity unless they cause hæmorrhage. It is safer not to interfere, and the membranes either come away a few hours after delivery *en masse*, or as small partly digested white flakes. Involution is seldom retarded nor is hæmorrhage pronounced. In cases of retained portions of placenta, treatment depends upon the presence or absence of hæmorrhage. If this is present, the uterus and vagina are either packed, or the uterus curetted, the former procedure being adopted if the patient is depleted or in a critical condition, the latter if the general condition is good. If bleeding is slight or absent a course of "masterful inactivity" is pursued.

The treatment of post-partum infections is governed by the same principles. There is no surgical invasion of the uterus even though there are infected products inside. Here, as elsewhere in infective processes, treatment consists in the establishment of proper drainage, letting nature separate the slough and trusting to the recuperative powers of the patient, maintained and strengthened by hygienic, dietetic, and static measures. Drainage is aided by having the patient sit up in bed on a sterile pad. The Gotch bed is recommended. Cleansing vaginal douches are used under low pressure. The vulvar pads are removed and an ice-bag is placed on the hypogastrium. The open air, or failing this, a freely ventilated room is advised. The patient is encouraged to drink large quantities of water and take a sustaining liquid diet. Sponge baths are given for fever of  $103^{\circ}$ , and an ice-cap is used for severe headache and delirium. Stimulants and measures to promote rest and sleep are ordered as required. These measures, the author claims, have not only reduced the suffering and discomfort of his patients, but have very favorably influenced his mortality statistics.

The routine use of the curette, manual explorations, tamponades, and escorotics is condemned. The large, tender, boggy uterus is the expression of an infective process, and does not indicate retained products of conception. The uterine cavity when curetted under such conditions is usually found empty. Infection which threatens the life of the patient lies within the uterine wall or beyond it, and not merely in retained portions of placenta which if present are considered an associated accidental occurrence. Curettage can only open up millions of new avenues for the entrance of infection, while the manual method can only be successfully carried out by using a great deal of force both over the fundus and per vaginam. Such manipulations are held to be the direct cause of chills, lung

involvement, and thrombophlebitis. Where hæmorrhage accompanies a very severe infection the uterus upon curettage is usually found empty and the author believes the bleeding is due to toxic hæmophilia. In this extremely fatal type radical surgical treatment most decidedly does not help matters. In such cases it is advised to gently draw down the cervix and pack the uterine cavity with plain or iodoform gauze.

Intra-uterine douching in so-called supraphytic infections is pronounced inefficacious, in fact, dangerous. The author has collected from the literature sixteen cases of chemical peritonitis following the douche without rupture of the uterus. Clinical and experimental evidence is quoted to show how easily fluid injected into the uterus can be forced through the patulous tubes into the peritoneal cavity.

Vaccines and sera have not given encouraging results, which might be expected in these acute infections since the patients are already reacting to the full extent of their resistance. Intravenous injections of collargol, magnesium sulphate, and like preparations have never appealed to the author and have been used by him but little.

C. D. HAUCH.

#### MISCELLANEOUS

**Thomas, T. T.: Obstetrical Paralysis.** *N. Y. M. J.*, 1914, c, 63. By Surg., Gynec. & Obst.

Ten years of study upon the cadaver convinced Thomas that, contrary to the prevailing theory, upper extremity palsies were usually due to injury of the shoulder-joint rather than to direct injury to the brachial plexus. In this article he contends that obstetrical palsies have a similar etiology and his conclusions are based upon a study of 13 cases.

Dislocation with spontaneous reduction, overlooked posterior subluxations, and sprains of the shoulder-joint cause extravasation of blood into the loose axillary tissues around the branches of the brachial plexus, producing inflammation, compression, and, later, cicatricial compression of those nerves. The treatment he recommends, therefore, is to restore normal motion to the shoulder-joint.

WILLIAM H. CARY.

**Sakaki, C.: Treatment of Asphyxia in the New-Born** (Über die Behandlung des Scheintodes bei Neugeborene). *Deutsche med. Wchnschr.*, 1914, xl, 704.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author recommends the following method for the treatment of asphyxia in the new-born: After the masses in the child's mouth and pharynx have been completely removed, the child is seized with both hands, the index fingers resting in the axillæ from the back and the thumbs meeting in front of the neck so as to support the chin and avoid too great bending of the neck. The other three fingers lie obliquely across the back of the thorax. The obstetrician bends his body forward and holds the limp child in front of him. With the arms of



the child flexed at the elbow and the upper arms pressed firmly against the body, the child is shaken up and down tolerably rapidly but not too vigorously. After a few seconds of shaking, a sound is heard that is caused by the ingress and egress of air from the air passages. Then the child is suspended by the legs, and shaken lightly up and down, so that the mucous flowing from the mouth and nose is removed; after a few more seconds the child is seen to be breathing by itself. If this does not occur the first time, the maneuver should be repeated until it can breathe by itself. It generally takes only a few minutes to bring the child to life again.

It may be asserted that this shaking method may cause a foreign body pneumonia in the child, on which account it is dangerous and should not be used. But there is no doubt that the method will bring the asphyxiated child back to life, and it would be better to do this and then treat a foreign body pneumonia afterward than to use other old methods that would not remove the mucous masses from the air passages, and allow the child to die.

HELLER.

**Boys, C. E.: The Rôle of Pituitary Extract in Obstetrics.** *J. Mich. St. M. Soc.*, 1914, xiii, 429.  
By Surg., Gynec. & Obst.

The author gives a very comprehensive clinical analysis of 100 obstetrical cases, which demonstrates very forcibly the usefulness of pituitary extract in properly selected cases.

From this study the following data may be formulated:

1. Pituitary extract is practically free from danger if used after dilatation is mostly accomplished, and if used to overcome simple uterine inertia.
2. An accurate diagnosis, just as for the application of forceps, is absolutely essential to the safe employment of the extract.
3. The average time required for a response to the extract was 7.5 minutes and when labor was not terminated by it, or by forceps, the average duration of its effect was about two hours, after which time the pains returned to their former type of inefficiency or stopped entirely.
4. By hastening the labor it saves many hours of suffering and exhaustion on the part of the mother.
5. By its use false pains may be changed to true ones in 75 per cent of cases.
6. It replaces forceps in probably 70 per cent of cases where they are indicated.
7. It helps to prevent puerperal sepsis.
8. The preparation known as pituitrin was used in all of the 100 cases.

HARVEY B. MATTHEWS.

**Foges, A.: The Use of Extracts of Hypophysis in Obstetrics** (Die Anwendung der Hypophysen-substanzen in der Geburtshilfe). *Wien. med. Wchnschr.*, 1914, lxiv, 1004.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Four years ago the author made his first report on the practical use of pituitrin following the

animal experiments of Von Frankl-Hochwart and Fröhlich; its use was limited at that time to post-partum hæmorrhage caused by deficient contractions of the uterus. Since then there has been a great increase in pituitrin literature, and after having been used in many ways it has been found that the usefulness of pituitrin is limited to a certain time during labor. This conclusion is based on the fact that pituitrin has often failed to take effect in cases of incipient abortion and defective contractions in the first stage, and that it has often caused unpleasant complications, dangerous both to mother and child, because of intense, stricture-like contractions of the cervix with the os incompletely dilated. Foges therefore limits the indications. Extract of hypophysis is an indispensable medication in secondary atony during the second stage, and in the third stage, and in cæsarean section in connection with different ergot preparations it is a valuable means of overcoming atonic hæmorrhage.

BAYER.

**Seeley, W. F.: Pituitrin in Obstetrics, with an Analysis of Forty Cases.** *J. Mich. St. M. Soc.*, 1914, xiii, 439.  
By Surg., Gynec. & Obst.

The author studied the effect of pituitrin, given intramuscularly, in the following cases:

1. In twelve cases at term pituitrin was given to induce labor. There was a definite response in only one case, in which labor began immediately.
2. Nineteen patients received pituitrin during the second stage of labor when forceps were indicated. Fourteen, all primiparæ, except one, delivered themselves spontaneously in an average time of 28 minutes. The author observed untoward effects in three cases where marked asphyxia of the child occurred. Urination after delivery seems to be facilitated in those cases which receive this drug. In post-partum hæmorrhage the results are good but not superior to those following the administration of ergot.

WILLIAM H. CARY.

**Boyd, G. M.: Craniotomy.** *Penn. M. J.*, 1914, xvii, 774.  
By Surg., Gynec. & Obst.

Boyd gives as the indications for craniotomy the following:

1. When the foetus is non-viable and the patient is suffering from some grave disease; e. g., eclampsia.
  2. In the presence of a dead child, from any cause, to prevent further injury to the maternal soft parts.
  3. In cases of hydrocephalus where delivery of a live child is impossible.
  4. In treating the monster.
- In conclusion, the author emphasizes the following points:
1. That craniotomy should be more frequently performed for the dead child.
  2. That craniotomy performed by a skillful operator should have no mortality.
  3. That cæsarean section, to-day, has so low a mortality that in suitable cases it should be more frequently performed.

HARVEY B. MATTHEWS.

# GENITO-URINARY SURGERY

## KIDNEY AND URETER

Spitzer, W. M.: *Radiography of Normal Kidney and Ureter. Colo. Med.*, 1914, xi, 272.

By Surg., Gynec. & Obst.

This report is based upon pyelograms obtained in 28 normal cases, and the author calls attention to the meager knowledge on just what constitutes a normal pelvis. He was impressed with the frequency with which kinks were found, and he believes they are normal and not pathological. He is very much opposed to having these patients X-rayed in a standing position, and as a result of his work, he comes to the following very sound conclusions:

1. Pyelography is not only justifiable, but necessary; however, none but the trained urologist should attempt it.
2. Unless the lower border of the pelvis is concave, we consider it pathologic.
3. A pelvic content of over 12 ccm. is pathologic.
4. Movement of the kidney of from 1 to 3.5 cm. over and above the physiologic (respiratory) movement is normal.
5. The ureteral catheter, as a rule, enters the upper oblique calix and in a normal case follows the roof of the kidney pelvis to do so.
6. Angulations, curves, and kinks of the ureters are found in normal persons.
7. Stereoscopic plates are not only necessary, but imperative, to demonstrate intrapelvic and extrapelvic conditions and the course and kinks of the ureter.
8. The length of the ureter, which can be calculated only from the plate, is of importance.
9. Pain is caused by rapid distention of the kidney pelvis rather than by any particular drug or percentage of drug used for this purpose. If one wishes to know that the kidney pelvis is properly filled, pain to a slight degree is unavoidable, but it passes away immediately. Shock caused by rapid distention can be avoided easily and completely.
10. As the shape of the ureter is due to its laxity or tenseness, either of which conditions may be normal, and as its caliber varies considerably in normal subjects, and is still further altered by peristalsis, care should be exercised in drawing conclusions that pathologic conditions exist because of apparent abnormalities of shape and course, or because of curves, kinks, and angulations or apparent constrictions.
11. Having found kinks in over 66 per cent of our series of normal ureters, we conclude that they are normal and not pathologic.
12. It is useless and unnecessary to put the pa-

tient in the standing posture for a radiographic plate of a collargol-filled pelvis, as nothing more can be learned from this position than from the recumbent position, except the position of the kidney. This is of no importance without pathologic conditions, which can be best demonstrated with the patient in the recumbent position. Furthermore, for this work the patient is more comfortable in the recumbent than in the upright position.

HERMAN L. KRETSCHMER.

Harris, S. H.: *Pyelography. Med. J. Austral.*, 1914, i, 33.

By Surg., Gynec. & Obst.

After speaking briefly of the development of pyelography, the author describes the technique he considers best and least likely to cause injury to the patient. A small bore catheter—No. 5 or 6 F.—is passed up to the renal pelvis, which is emptied as completely as possible of residual urine, and the amount measured. Except in certain irritable conditions of the kidney, in which the urine may be secreted as fast as it is drained away, the emptying of the pelvis is signified by a cessation of the more or less continuous flow of drops from the end of the catheter, the dropping becoming slower and more intermittent. A colored lotion is then slowly injected up through the catheter, the ureteral orifice being at the same time watched for reflux. When the pelvis and ureter are full, the colored fluid will be seen to flow back in a continuous stream by the side of the catheter, and this will occur before the patient has experienced any sensation of pain or tension.

The cystoscope is then removed, the fluid allowed to drain away, and the patient transferred to the X-ray couch. A 5 to 15 per cent emulsion of silver iodide in mucilage of quince seeds is then injected—the quantity being a little less than the ascertained capacity of the pelvis and ureter—and a radiogram made of the upper urinary tract with the patient in the supine position. Some of the emulsion is then allowed to syphon off and the catheter is partly withdrawn. A few drops of the emulsion are again injected and another radiogram made of the lower tract. These plates should be developed at once, and if there is doubt as to the exact condition a third plate should be made of the upper tract, with the patient in the erect posture, after he has performed actions calculated to displace a movable kidney.

Clubbing of the calices is to be considered as the earliest sign of pelvic enlargement. A discussion of the uses of pyelography and the citation of a number of case histories conclude the article.

S. W. MOORHEAD.



**Wossidlo, E.: Pyelography** (Zur Pyelographie).  
*Ztschr. f. Urol.*, 1914, viii, 357.  
 By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In a case in Zuckerkandl's clinic, after an injection of collargol into the kidney pelvis, there was a focus in the kidney similar to an infarct mixed with collargol. As a result of this case Wossidlo performed some animal experiments in pyelography. In animals with normal kidneys he found that as soon as the capacity of the kidney pelvis was exceeded, collargol could be demonstrated in the interstitial connective-tissue spaces. In traumatic lesions of the kidney the collargol entered the cavities already formed by the trauma and from there extended to the rest of the parenchyma. After the application of uranium nitrate the inflamed kidney, because of the increased internal pressure, was free of collargol, but the collargol appeared in the connective tissue around the kidney pelvis. In hydronephrotic kidneys the collargol rose in the urinary tubules to the capsule.

Wossidlo concludes from his experiments that in man the normal capacity of the kidney pelvis must not be exceeded. If hæmorrhage takes place on catheterization of the ureters, pyelography must not be undertaken. In hydronephroses the quantity of collargol must be less than that of the residual urine. Technically, it is important to use a very thin catheter, so that the superfluous collargol can flow back beside the catheter into the bladder and so that the tension can be felt.

In the discussion NECKER's remark was of particular interest; i. e., that in the case in the Zuckerkandl clinic 7 ccm. of a 10 per cent solution had been injected slowly without pressure. The fault, therefore, was not in the technique, but in the fact that the injection had been made in spite of the fact that a discharge of blood from the ureteral catheter showed a traumatic lesion of the mucous membrane of the kidney pelvis. GEBELE.

**Walker, J. W. T.: Pyelography: a Critical Review.**  
*Brit. J. Surg.*, 1914, ii, 128.

By Surg., Gynec. & Obst.

It is not always possible to pass the catheter to the renal pelvis, owing to spasms in the lower portion of the ureter or to an obstruction in the upper end of the ureter. Such obstructions, however, as a rule, allow the injected solution to pass. When the catheter is arrested at the lower end of the ureter, the ureteric orifice should be watched to see if regurgitation takes place, in which case the fluid will not pass up to the kidney. If doubt exists the fluorescent screen should be used. The 10 to 20 per cent collargol solution, which has been heated to a little above the body temperature, is introduced by means of hydrostatic pressure. The author uses the barrel and needle of an all-glass syringe with a capacity of 20 ccm. The syringe is raised with the catheter vertically to the height which that portion of the ureteric catheter protruding from the urethra will allow. Two signs showing that the pelvis is

full are: pain in the renal pelvis, and hesitation, and finally cessation of the lowering of the level of fluid in the barrel. The patient usually complains of slight scalding sensations when the collargol solution regurgitates into the bladder. The urine remains stained with collargol from 6 to 8 hours in ordinary cases.

Pyelography in the diagnosis of renal growths shows the following changes:

1. Retraction of one or more calices well into the cortex, giving a bizarre "spider-leg" appearance.
2. Partial obliteration of the pelvic lumen by invading renal tissues with thin streaks.
3. Irregular pelvic dilatation following tumor necrosis or secondary infection.
4. Retraction and subsequent dilatation of the upper ureter by the surrounding tumor.
5. Abnormal position of the renal pelvis, so that its outline is found lying either extremely median or lateral.

The author describes a number of cases where pyelography showing the shadow beyond the outline of the kidney aided in making a correct diagnosis of cholelithiasis, hydatidcysts of liver, sarcoma of perirenal tissue, and two cases of tubercular glands below and around the kidney. The pelvis and the kidney itself gave a normal picture in all of these cases.

Causes of failure are:

1. Collargol solution escaping alongside the catheter into the bladder, leaving the pelvis empty before the radiogram is taken. This, however, is a guarantee against overdistention of the renal pelvis and subsequent forcing of the solution into the renal tubules. (The author uses a No. 5. F. catheter.)
2. Rupture of the kidney.
3. Entrance of collargol into the renal tubules, producing wedge-shaped infarcts alongside of and including the tubules.
4. Perirenal oedema.

There are three important factors in causing collargol solution to penetrate the tubules, viz.: (1) intrapelvic pressure; (2) duration of pelvic distention; (3) damage to the kidney by the ureteral catheter.

The duration of pelvic distention is reduced by skill with the surgeon and radiographer working in unison.

Fifteen cases are quoted to support the author's assertions. HARRY KRAUS.

**Martin, E. H., and Purdum, E. A.: Syphilis of the Kidneys, with Report of Cases and Treatment.**  
*J. Ark. M. Soc.*, 1914, xi, 43.

By Surg., Gynec. & Obst.

The authors deplore the general confusion of ideas in regard to the classification of types of renal syphilis and suggest the following clinical differentiation:

1. Irritation from toxins in the early secondary stage, with albumen in the urine, as in other acute dermal involvements. Very few such cases show

presence of casts, and the condition usually subsides after any sort of specific treatment.

2. Acute nephritis following extensive secondary skin involvement, as in scarlet fever, with casts and albumen. Mercury is poorly eliminated in this type, and pytalism supervenes promptly, especially under intramuscular administration.

3. A true acute syphilitic lesion of one or both kidneys, producing hæmorrhagic nephritis with many casts and pus-cells, but a relatively small percentage of albumen. These are cases with an acute onset, without other apparent predisposing cause, and either die or recover within a few days.

The authors claim that, regardless of the classification, the treatment should be the same for all. They have found salvarsan much better tolerated by normal or abnormal kidneys than are mercury and the iodides, and censure the idea that cardiac, pulmonary, and cerebral involvement should be considered primary contra-indications, while the organs mostly concerned in the actual handling of the drug after injection receive, so often, a scanty consideration.

In the various experiments performed by Wechselmann it was found that arsenic, like cantharides, affects the renal capillaries primarily, while mercury, like the chromium salts, damages the tubules severely.

It was also found in many cases that the excretion of salvarsan by the kidneys begins even before the act of administration is completed, and that the major portion of the drug is excreted usually in from six to twelve hours. Consequently the rational treatment in the case of a kidney already damaged by disease, as in the acute hæmorrhagic type referred to, would be to avoid prostrating a fast-failing organ by the use of mercury, which it eliminates at best with effort, but rather to use a moderately graded treatment with the more powerful salvarsan, which would be quickly excreted without adding to the pathological condition. In such cases, if enough mercury is forced into the body to check the disease, a death-dealing blow to the kidneys is produced.

The authors warn against the use of large doses of salvarsan, which overwhelm the kidneys, often causing anuria and giving time for the toxic oxides of salvarsan to form in the blood. Their conclusions are as follows:

1. The kidneys improve under salvarsan much more quickly than with mercury, soamin, or sodium cacodylate, at the same time avoiding pytalism and diarrhœa.

2. Salvarsan is a "cure" as well as a "treatment."

3. During intravenous administration in over three thousand cases no actual damage to the kidneys has been noted.

4. They have not been able to confirm Wechselmann's idea that it is dangerous to give salvarsan while the kidneys are under the influence of mercury.

5. With the proper care and dosage the supposed

dangers accompanying the use of this drug cease to exist.

H. W. PLAGGEMEYER.

**Neuhof, H.: Unusual Complications in Renal Tuberculosis.** *N. Y. M. J.*, 1914, c, 130.

By Surg., Gynec. & Obst.

This very interesting case is worth a more or less detailed abstract. A laborer, aged forty-three, had in childhood been operated upon for an affection of the left hip, complicated with a spontaneous rupture of an abscess. Permanent ankylosis of the joint resulted.

The patient came under observation in 1909, giving a typical history pointing toward renal tuberculosis. Owing to an obstruction in the posterior urethra, it was impossible to introduce a cystoscope into the bladder, but examination by sounds revealed a marked stricture of the deep urethra. The right kidney was exposed, freed, and delivered into the wound. It appeared quite normal, and the wound was therefore packed, and the left kidney exposed in the same manner. Its fatty capsule was moderately adherent. The kidney was freed completely and a considerably enlarged organ delivered into the wound. The ureter was isolated from the pedicle and the renal vessels were separately ligated. The organ was found extensively diseased; numerous large and small caseous abscesses were found, especially at the pole.

About three months after the operation the vesical symptoms returned. The urine was voided every hour or two. No tubercle bacilli, however, were found. Tuberculin was used and dilatation of the strictures of the urethra was started. Six months after the operation a swelling over the right wrist appeared. It was evidently the result of the pressure of the cane upon which the patient bore heavily when walking. X-rays showed extensive osteomyelitis. About the time the foregoing condition had in large part cleared up, the patient stumbled and struck his right tibia. X-ray showed osteomyelitis, probably of tuberculous variety.

Two and one-half years after the nephrectomy, the patient reappeared, and after the urethra was successfully dilated, cystoscopy was accomplished. The cystoscopic examination revealed the following condition: low grade cystitis; several ulcerations about the mouth of the left ureter. The catheterized urine was free from blood, pus, and tubercle bacilli.

I. S. KOLL.

**Schmidt, L. E.: Indications in Renal Surgery Which Demand Immediate Operative Intervention.** *Chicago M. Recorder*, 1914, xxxvi, 392.

By Surg., Gynec. & Obst.

The author, in an appeal to the profession, begs for recognition of the urgency in many renal conditions. He refers particularly to those conditions which threaten the destruction of the organ, where, if not relieved by operative interference, the general condition becomes so involved that the termination is often fatal. He classifies his indications according to the most serious conditions that may arise, and



the first of these, hæmorrhage, whether produced by injury or occurring in the course of nephritis, tuberculosis, stone, or neoplasm, may require immediate interference.

Under acute nephritis he classifies (1) the acute parenchymatous type, produced by the various infectious diseases; (2) the acute suppurative type, exemplified by the colon bacillus infection; (3) the acute toxic type, produced by drugs and toxins.

Under the head of acute purulent nephritis he places all cases except those belonging to the acute infectious diseases, or those in which there are bacteria in the blood circulation. As a rule, the general train of symptoms may be quite variable: chills, remitting and irregular temperature, nausea, vomiting, and malaise. There is no positive way of determining before operation the exact gravity of the individual case, should quick decision be necessary in regard to the urgent need for operation.

The urinary findings may be entirely negative, or nearly so. In extreme cases the urine is clear, with only the slightest trace of albumin or none at all; an occasional hyaline cast or a few leucocytes may be the only finding.

In conclusion, he states that it is possible for a one-sided acute infectious nephritis to occur. If the process is not too far advanced, the operative procedure may stop the further progress of the destruction and extension to the opposite kidney. If operation is decided upon in cases of acute infectious nephritis, if the involvement has not progressed too far, nephrotomy with drainage is the operation of choice.

I. S. KOLL.

**Fowler, O. S.: Ureteral Obstruction and Kidney Infection Method of Nephropexy.** *Colo. Med.*, 1914, xi, 263.

By Surg., Gynec. & Obst.

The basis of this paper is the result of animal experimentation. Fowler attempted to study the influences of urinary stasis upon the production and maintenance of kidney infection.

Briefly, this consisted of attempting to produce a partial obstruction in one ureter, and then injecting colon bacilli above the obstruction, and at a subsequent date to inject the bacilli into the opposite kidney as a control.

The conclusion is that so far as the results seem to point definitely, it is necessary to have more or less obstruction in the ureter for the colon bacilli to obtain a foothold in the dog's kidney, and he further believes that the same conditions are necessary in man.

HERMAN L. KRETSCHMER.

#### BLADDER, URETHRA, AND PENIS

**Joseph, E.: Treatment of Papillary Tumors of the Bladder through the Cystoscope with High-Frequency Currents** (Behandlung der Zottengeschwülste der Blase unter Leitung des Cystoskops mit dem Hochfrequenzstrom). *Deutsche Gesellschaft. f. Chir.*, 1914.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In this treatment an electrode the form of a ureteral catheter is made use of, through which the

ureteral cystoscope is introduced into the cavity of the bladder. A second electrode is placed under the patient's buttocks. Both electrodes are connected with an ordinary diathermia apparatus. As soon as the tumor is touched with the intravesical electrode the action of the high-frequency current begins. The rose-colored papillomatous masses, which contain blood-vessels, become white and contract. The destruction of the papillomatous masses is not only accomplished without hæmorrhage, but severe hæmorrhages which had occurred before treatment and are exhausting the patient can be stopped by applying thermocoagulation to the parts of the tumor from which the bleeding had originated. Besides this, the treatment with high-frequency currents offers the following advantages:

1. Ease of accomplishment, even by persons who are not very skilled in the use of the cystoscope.

2. The possibility of applying the current anywhere in the bladder, at the apex as well as the sphincter. At the sphincter it is better to use a ureterscope that carries a coagulation sound; ordinarily, it is not possible to reach tumors at the apex and sphincter with the cautery and loop.

3. The marked deep effect on the bladder-wall that aids in the radical removal of the pedicle of the tumor or the base of sessile tumors.

4. The possibility of discovering and treating the smallest tumor nodules, the size of a pin-head, which on incision may easily escape the eye in the incised and contracted bladder.

5. Treatment can be given in most cases without the patient going to bed and without interfering with his daily work, so that he readily returns for treatment, while it is difficult to persuade him to have repeated surgical operations, especially as, even then, there is no guarantee against recurrence.

The author has treated 10 tumors by this method since June, 1913, and is very well satisfied with the results obtained. Two of the ten tumors were malignant. He coagulated tumors with such broad bases that they almost filled the bladder cavity, and even projected into the entrance of the bladder and, hence, were inoperable. He saw no advantage for this method in malignant tumors except a temporary stoppage of the hæmorrhage. He did not, therefore, use the method in a third case of general papillomatosis of the bladder, in which there was no great degree of hæmorrhage. But the results are very good in ordinary papillomata, whether single or multiple. The author treated 8 of these. He cannot say as to recurrence after thermocoagulation, as the time since the introduction of the new method has been too short. As thermocoagulation has a marked deep effect he does not think that local recurrence at the former site of the tumor is probable; but, in view of the marked tendency of papillomata to recur at a distance, he thinks it possible this may occur, although it is not so probable as after operation, where numerous lymph- and blood-vessels are opened. He recommends the method earnestly,

especially in old people and in recurrence after *sectio alta*.

VOELCKER, of Heidelberg, acknowledges the great advantages of the intravesical operation, because in this way *sectio alta*, which is by no means without danger, can be avoided. Resection of the bladder by the suprapubic route is the proper operation for infiltrating carcinomata. It is very important to bring the bladder outside the peritoneum for the operation. The peritoneum is opened transversely in front of, and behind, the bladder and closed again behind it so that the bladder lies in a closed-off preperitoneal cavity. It is then easy to resect tumors that lie in the apex of the bladder. Tumors which lie farther downward are best removed by unilateral resection of the bladder. The ureter is implanted in the posterior wall of the remaining part of the bladder and it is closed by suture so as to form a new bladder. Resection of the bladder for infiltrating carcinoma has a very high mortality and the ultimate results are very poor.

BORCHARD, of Posen, called attention to pseudotumors of the bladder and demonstrated, as an example, a diverticulum of the bladder in a girl of 22, which originated from the posterior inferior wall of the bladder below the opening of the ureter, reached the size of a dove's egg, prolapsed, and extended out of the anterior opening of the urethra — it was treated by *sectio alta* and intravesical operation. Inflammatory thickenings in the region of the bladder resulting from chronic osteomyelitis of the ascending ramus of the pubis may be confused with sarcoma of the bladder. As examples, he cited two cases, one in a 14-year-old boy and one in a 44-year-old woman. Tumors originating from the bladder wall or spermatic cord may come out through the external inguinal ring and draw the bladder after them, so that the bladder must be resected in the operation. It was necessary to perform partial resection of the bladder in the case of a 67-year-old man because of a fibrosarcoma of the inguinal region; even microscopically, it could not be determined whether the tumor originated from the bladder or spermatic cord.

CASPER stated that among 224 operations for tumors of the bladder, 186 were benign and 38 malignant. Thirty-three of them were operated on by resection of the bladder wall: 8 survived the operation longer than a year, one has now been living over 4 years, and another over 7; the 5 other cases were treated with radium. No conclusive judgment can be given on these as the time is too short and the technique too uncertain. One case has been favorably influenced subjectively and objectively, though not yet cured. He reported a case which was an example of the transformation of a papilloma into a carcinoma. A 73-year-old patient had had hæmorrhage for the first time 14 years before. A tumor, which was said to be a benign papilloma, was removed by intravesical operation. The patient was well until four years ago, when hæmorrhage began again. The author

removed pieces of tumor with a loop, which Benda reported as typical carcinoma. (These were demonstrated.) The patient still has the tumor, but shows no symptoms and his general condition is good; occasionally he has hæmorrhage. As carcinoma generally does not persist so long, the only explanation is that the originally benign papilloma was transformed into carcinoma. Ten papillomata were removed with the high-frequency current. The natural tendency of papillomata to recur is increased by the cutting operation. In the high-frequency method, though there may be recurrence, there is not the disastrous generalization of the tumor that follows surgical operation, and beginning recurrences can be quickly and easily removed.

The advantages of the high-frequency treatment are:

1. It is easier and simpler to perform and is less painful for the patient.
2. There is little or no bleeding, so that the physician can work in the bladder a much longer time than with the old methods, and can remove much more of the tumor at one sitting; therefore, the treatment can be finished sooner.
3. Much more of the bladder can be reached than formerly; hence, tumors can be removed that could not be reached by intravesical operation. Because of the quickness of the method much larger tumors can be removed than formerly.
4. The method is less dangerous than others because there is little or no bleeding.

STAMMLER, of Hamburg, stated that in the diagnosis of carcinoma, not only the proportion of epithelium and stroma must be considered, but also the presence of atypical epithelial nests, which Kümmel thinks are precarcinomatous changes, and which explain recurrence after the removal of so-called benign tumors. There is permanent recovery after malignant tumors in 20 per cent of the cases. He reported recoveries that have persisted for 16, 14, 10, 8, and 5 years. Even in benign tumors he performs *sectio alta* with resection of the bladder wall; in 25 cases there was only one death after operation — from heart disease. He does not see any advantage in the intravesical method over the results attained at Hamburg.

BLUMBERG, of Berlin, reported a large tumor of the urethra treated with radium — 6,000 milligram hours in two weeks. It is noteworthy that there was no injury of the normal tissue. The patient died of heart disease. There was severe cystitis and a thin superficial layer of carcinoma in the bladder, with several necrotic areas. The tumor of the urethra had disappeared and there was hyaline degeneration of the connective tissue.

HEINEKE, of Leipzig, demonstrated a large multilocular cyst of the bladder which had been mistaken for a congenital diverticulum of the bladder and extirpated. As the bladder wall contains no glands, he believes in the origin of the bladder epithelium from the epithelium of the cloaca.



ERNST R. W. FRANK, of Berlin, was the first to use the bipolar application of low-tension high-frequency currents in urology, and has used the diathermic method since 1911, especially in the treatment of tumors of the bladder and of papillomata and adenomata of the posterior urethra. Properly used, the method is without danger and is painless for the patient, and has the advantage of allowing accurate dosage and localization, and also of reaching places that are very hard to reach with other intravesical methods. If the treatment is limited to coagulation, and necrosis is avoided, there is no danger of secondary hæmorrhage. The coagulated parts of the mucous membrane show an extraordinarily strong tendency to cicatrize and become covered with epithelium. The dissemination of the papilloma, which so often occurs with cutting operations, need not be feared with this treatment. The method may be used with advantage in a large number of cases of malignant tumor. He has treated with the instrument made by Siemens and Halske 26 tumors of the bladder, a large number of small tumors of the posterior urethra, and two tubercular tumors of the bladder. The cases were first treated more than three years ago and they are still free from recurrence. He has treated tumors as large as a mandarin in this way. These cases demand a special technique and a part of the tumor should first be removed with the loop.

SCHULTHEISS, of Bad Wildingen, reports 46 cases of bladder tumor, on which he operated by high section of the bladder: 31 carcinomata, 14 papillomata, and 1 dermoid. Nine carcinomata proved inoperable after opening the bladder, 3 died within four weeks after the operation, 8 had recurrences within the next four years, one could not be found but was known to have been living three years after the operation. The other 9 are alive. Three of them may be regarded as completely cured, as the operations were done more than five years ago. Six are still under observation, and in 2 of them there is a suspicion of recurrence. Among the 14 cases operated on for papillomata with pedicles, one 70-year-old patient died of pneumonia, after the operation; two died in the course of a year of other diseases with the bladder in good condition; another was operated on again; and another, now, after 7 years, has a recurrence; 10 of the cases are alive without recurrence, 6 of them for more than 4 years. He recommends accurate suture of the bladder, tamponade of the abdominal wall, and if the bladder is sufficient and free from catarrh, no drainage. When drainage is necessary it is established through the natural route, with a specially constructed cylindrical, elastic, large-calibered catheter, with large holes in the central end.

WOSSIDLO, of Berlin, believes that resection is the only treatment for carcinoma. Recurrence is to be expected after two years. In inoperable carcinoma he establishes a permanent fistula of the bladder and treats with röntgen rays. Benign tumors, if they are not too large and too numerous, he treats with

the high-frequency current, and among 39 cases in two years has had no recurrence.

HERZBERG, of Berlin, has shown in animal experiments that the coagulation extends in a hemispherical form, so that the radius of the circle that is visibly changed is the measure of the depth to which the current acts.

RINGLEB, of Berlin, believes that thermocoagulation has numerous disadvantages as compared with Nitze's loop, chief among them being the fact that it is too long. He can get as deep an effect with currents of 25 to 30 amperes as with thermocoagulation. The indications for intravesical procedures should not be extended too much; when there is congestion in the region, collateral œdema, or catarrh of the bladder, high section should be performed.

KÖNIG, of Marburg, thinks two localizations of papilloma are especially interesting: the region of the internal orifice, where the new method is excellent, and the region of the opening of the ureter. Here is involved the question of what is to become of the ureter. He understands Voelcker to mean that carcinoma demands section and extirpation in all cases.

PHILIPPOWITSCH, of Breslau, believes that röntgen diagnosis of bladder tumors is to be recommended in stricture; it also shows involvement of the bladder walls at an early stage, and it aids in the choice of treatment. It is carried out by filling the bladder with a 5 per cent collargol solution, and removing it by distending the bladder with air. The collargol remains adherent to the tumor.

HILDEBRAND, of Berlin, does not approve of the intravesical treatment of carcinoma, but believes that in papilloma it is justified to a certain extent. Thermocoagulation, he thinks, is a distinct advance.

JOSEPH, of Berlin, is of the opinion that too large papillomata should not be treated by the intravesical method because of the danger of putrefaction and catarrh. In malignant tumors he has not succeeded in stopping the hæmorrhage with thermocoagulation. He thinks the distention of the bladder with air is dangerous; he remembers a case of death from air embolism where this method was used.

KATZENSTEIN.

**Squier, J. B., and Heyd, C. G.: An Operative Technique for Radical Extirpation of Vesical Neoplasms.** *Surg., Gynec. & Obst.*, 1914, xix, 91.  
By Surg., Gynec. & Obst.

Through an inferior median incision the prevesical space is opened and the urachus grasped with forceps. By means of a bilateral "step-by-step" blunt dissection along the obliterated hypogastric artery and vas deferens, the ureter is exposed as it enters the bladder. Then the fundus and trigone are dissected free from the peritoneum deep into the rectovesical fold of Douglas. The bladder is thereby entirely free on its superior and posterior surfaces while the anterior attachments have been left undisturbed. The two ureters, vasa deferentia,



and superior poles of the vesicles are constantly in sight.

A median longitudinal incision is usually employed to enter the bladder. The neoplasm is excised *en masse* with a wide encircling margin of healthy tissue. The ureter if involved is brought through the stab-wound and fastened to the bladder wall. The vesical defect is closed with No. 2 chromic catgut and a separate buttonhole incision is made anterior to the suture line for drainage. In addition a self-retaining catheter is inserted.

**Kolischer, G., and Schmidt, L. E.: Radiotherapy of Malignant Tumors of the Bladder.** *Chicago M. Recorder*, 1914, xxxvi, 308.

By Surg., Gynec. & Obst.

In this very interesting preliminary presentation the authors give in detail the technique of radiotherapy, briefly abstracted as follows: It must be stated that results in malignant tumors may be expected and obtained only by the use of the hard penetrating rays with the exclusion of the soft rays, so as to avoid damage to the superseding and adjacent tissues. Secondary radiation must be eliminated, as it is apt to injure the skin. This is accomplished by placing a leather screen before the metallic filter and covering the skin with flannel. For example, in the röntgenization of a cancerous growth in the unopened bladder, the suprasymphysal area of the abdominal skin corresponding with the bladder region is divided with a colored pencil into as many quadrangular fields as is deemed expedient, and each field in turn is rayed, while the others in the surrounding area are screened off. In this way a number of points of entrance are secured, thus securing the desirable "cross-fire."

Another category of cases is represented by those in which an attempt at resection is made, and in the course of the operation it is found impossible to complete the work. Then the bladder wound is not closed, but its lips are fastened to the abdominal wall, thus guaranteeing free access to the interior of the bladder at a future time. After the tissues once become properly united, a lead glass speculum is introduced into the bladder through the abdominal opening and the tumor is fixed into the end-opening of the speculum.

The mode of applying the mesothorium also depends upon whether an unopened bladder is dealt with or one carrying an abdominal fistula.

At this step attention is again called to the fact that it is now fairly well established that less than 50 milligrams of mesothorium or radium have no curative effect on compact growths, but are rather apt to do harm by stimulating the growth of the tumor and by bringing about rapid development of metastases, which lead to the "reidose" of German authors, instead of developing a destructive influence on the tumor-cells.

The combination of X-rays and mesothorium rays can be accomplished in this way, that while the mesothorium capsule is inside the bladder or in the

tissues, at the same time the X-rays are applied through the abdominal wall. It is advisable to resort to this combination only in desperate cases. Under ordinary circumstances it will be preferable to follow the mesothorium with the X-ray treatment, or *vice versa*. At some interval the combined effect may be expected, because it is known that the raying shows remote results.

The authors are trying to enhance the efficiency of radiotherapy by simultaneously administering arsenic therapy, and by the hypodermatic injection of cancer toxins.

I. S. KOLL.

**Ross, T. W.: The Present Status of Posterior Urethroscopy.** *Med. Sentinel*, 1914, xxii, 1650.

By Surg., Gynec. & Obst.

Ross states that the polypi of the sphincter border are very common both in the male and female, and that they often give rise to no symptoms or cause severe manifestations. He mentions the severe case of an old woman who had been the rounds of all the Frauen-Kliniks in Berlin complaining of inability to urinate without placing her finger in the vagina and pressing upward on the base of her bladder; her right hand was fearfully excoriated and eczematous from the irritation of the urine. The author has seen this woman cystoscoped by two of the best cystoscopists in Berlin, the picture showing only severe cystitis granulosa and granular sphincter. The ordinary urethroscopes showed nothing, but upon using the Wassildo irrigation instrument, there was found a thin arrowhead-shaped polyp with its apex just within the urethra, situated at about 8 o'clock on the right lateral wall and extending over the border and large enough to occlude the internal meatus. Operation relieved the condition completely.

The causes of hæmaturia of the terminal type, when the cystoscopic showings are negative, often can be diagnosed by this method. The membranous urethra is seldom the seat of any pathological conditions except polypi or stricture from external causes. Irrigation urethroscopy is of little value in the anterior urethra, but occasionally rare and exceptional changes present themselves in anterior urethroscopy that cannot be interpreted by the usual methods, and in these cases the irrigation urethroscope by water dilatation and a greatly enlarged visual field may clear up the diagnosis, and the posterior irrigation urethroscope occasions no more pain or discomfort in its passage than the ordinary sound.

To sum up the advantages of posterior irrigating urethroscopy is not an easy matter, since it is a very new and a very live subject, and time will add many brilliant achievements to this field, but a few more of the important things it has given are:

1. It is possible to see posterior urethral conditions under great magnification. The conditions can be treated at the exact site without needlessly disturbing the healthy portion of the urethra, as with instillations. Prostatic massage can be applied



when its necessity can actually be seen, and not as a routine procedure. By it a newer conception has been given of some of the causative factors of sexual neurasthenia and better ideas as to its treatment.

2. It is superior to cystoscopy in the diagnosis of prostatic hypertrophy and has been the means of permitting the Goldschmidt palliative galvano cautery prostatic incision under direct vision on inoperable prostatic cases. H. A. MOORE.

**Pedersen, V. C., and Darling, B. C.: Mensuration and Projection of the Posterior Urethra and Vesical Floor by Means of Posterior Urethral Calipers and Radiography.** *N. Y. M. J.*, 1914, c, 113. By Surg., Gynec. & Obst.

In their experiments the authors used an instrument consisting of a metal catheter bent near its tip at an angle of  $135^\circ$  and terminating in a metal acorn. The vesical orifice of the catheter was located 1.5 centimeters back of the acorn, while an equal distance back of the opening was an olivary enlargement. In using the instrument the bladder was filled with a solution of collargol, the catheter being withdrawn until the solution ceased to flow, and a radiogram made with the tube tilted about ten degrees. The acorn was therefore shown lying on the trigonum, while the olivary enlargement indicated the position of the middle of the prostatic urethra in the male or of the urethra in the female.

As a result of the experiments it was determined that the vesical orifice of the urethra lies either at or within about 1 centimeter of the upper margin of the pubic arch, as outlined in the radiogram, while the prostate and female urethra lie behind that structure. It was also found that the form of the bladder varies enormously, the outlines at times being far from symmetrical. S. W. MOORHEAD.

**Underhill, A. J.: Dilatation of an Otherwise Impassable Stricture by the Retrograde Passage of a Filiform Guide.** *Surg., Gynec. & Obst.*, 1914, xix, 118. By Surg., Gynec. & Obst.

The author describes a procedure resorted to in a case of retention of urine, due to an old stricture at the bulbomembranous junction which closed down during convalescence from an attack of lobar pneumonia.

It was impossible to pass a filiform bougie through the meatus, and the bladder was drained through a suprapubic opening made under local anæsthesia. As this emergency operation was followed by an attack of uræmia the following procedure was adopted.

A metal catheter, the end of which was cut off below the eyelet, was passed through the opening left by the removal of the drainage tube. An observation cystoscope was passed into the same opening and the urethral orifice located. The end of the altered catheter was placed at this orifice and through the catheter were threaded into the prostatic urethra two filiform guides joined end to end by male and female threads. When the first appeared at the meatus, it was grasped and pulled through,

drawing the second after it until the joined ends of the two filiforms appeared; the first was then detached and replaced by a Le Fort follower, which was then passed back into the bladder without difficulty. The guide was tied into the urethra for forty-eight hours, when a larger follower was used and the dilatation continued at intervals, as is usual in cases of stricture.

**Starr, F. N. G.: Epispadias, a New Operation in the Male.** *Canadian Pract. & Rev.*, 1914, xxxix, 418.

By Surg., Gynec. & Obst.

The author operates as follows: The bladder is first packed with iodoform gauze, then an elliptical incision is made around the bladder opening and carried down into the peritoneal cavity. The peritoneum is then dissected off of the bladder, and its opening is closed by a purse-string suture. The ureters are exposed and by means of a forceps, passed into the rectum and drawn down into the rectal lumen. The bladder is next removed, the peritoneal drawn back into place, and the wound closed by layers. The child, so operated upon, could retain his urine from four to six hours. V. D. LESPINASSE.

#### GENITAL ORGANS

**Lespinasse, V. D.: Transplantation of the Testicle.** *Chicago M. Recorder*, 1914, xxxvi, 401.

By Surg., Gynec. & Obst.

According to the author, testicle transplantation is a perfect operation in chickens, and the transplanted testicle lives and produces spermatozoa; but in dogs and guinea pigs the transplanted testicles live only in part.

The spermatogenic elements atrophy very quickly, but the Leydig cells remain normal and continue to functionate.

The author reports one more human case in which the testicle, after being cut into small pieces, was transplanted into the substance of the rectus muscle. The clinical result in this case has been excellent. The man has regained his sexual power and says that sexually he is now normal.

**Barney, J. D.: Recent Studies in the Pathology of the Seminal Vesicles.** *Boston M. & S. J.*, 1914, clxxi, 59.

By Surg., Gynec. & Obst.

The author draws the following conclusions in his article:

1. Vesiculitis may occur from infection with tubercle bacillus.

2. When one vesicle is involved its fellow may also be safely accused.

3. Radiograms with collargol seem already to demonstrate the presence of inflammatory changes, and their future as a diagnostic aid seems bright.

4. Dense adhesions, usually surrounding the junction of the vas and vesicle, not only make operation difficult, but, in most cases, would make successful separation of the two structures impossible.

5. Disease of the vas at its ampulla accompanies disease of the vesicle, and the conservation of the

former structure, in the hope of preserving the continuity of the seminal duct, is of doubtful value to the patient.

H. L. SANFORD.

**Quinby, W. C.: The Anatomy and Physiology of the Seminal Vesicles with Regard to the Treatment of Their Lesions.** *Boston M. & S. J.*, 1914, clxxi, 58. By Surg., Gynec. & Obst.

The author has collected the latest information on the macroscopical anatomy of the seminal vesicles and the convolutions of its system of ducts, which has been secured through the newer injection methods. It is found that a very small per cent consist of simple straight tubes; a somewhat larger per cent present thick twisted coils with or without very small diverticula; another equal per cent consist of twisted tubes with or without small diverticula; and the remaining two-thirds have a short straight or twisted main channel with large bulbous diverticula or a short main channel with a large branched irregular accessory channel. The large blood supply of the vesicle enters mainly at the upper and outer border, which points to the necessity of careful ligation here before enucleation of the organ.

H. L. SANFORD.

**Kolischer, G.: Hypertrophy of the Prostate and Hypernephroma in the Same Patient.** *Internat. J. Surg.*, 1914, xxvii, 251.

By Surg., Gynec. & Obst.

Kolischer reports two distinct lesions occurring in the same patient, and in doing so wishes to emphasize the diagnosis. Some months following prostatectomy his patient suddenly developed intermittent vesical hæmorrhage. Cystoscopy was done, but instead of finding granulomata at the site of operation, as he had expected, blood was observed coming from the left ureter. Nephrectomy disclosed a primary hypernephroma.

The author emphasized the fact that cystoscopy should have been done before the prostatectomy, so that the kidney lesion would have been diagnosed early, and also that the hypernephroma was secondary to the hypertrophied prostate.

Another specimen was demonstrated, one of tuberculosis of the kidney, followed by hydronephrosis. The hydronephrosis was not due to a faulty ureteral outlet, but to a lessened resistance in the fibrous tissues of the pelvis.

C. D. PICKRELL.

**Gardner, S. J., and Cummins, W. T.: Prostatic Carcinoma in a Youth.** *Calif. St. J. Med.*, 1914, xii, 279. By Surg., Gynec. & Obst.

The patient, an American machinist apprentice, aged 17 years, was admitted to the hospital October 2, 1911. His family history was negative, and he had had no recorded illness except diphtheria 9 years previous.

His last illness had begun about seven weeks before with colicky pains in the lower left side of the abdomen accompanied by vomiting. The pains radiated to the left testicle. There was no hæma-

turia. Incontinence of urine was affected by posture. Three weeks previous the pain had shifted to the right side of the lower abdomen and radiated to the right testicle. He had lost much weight.

The urinalysis was: Clear; sp. gr. 1.018; acid; no sugar nor albumin; no casts. Death occurred January 12, 1912. Post-mortem record — markedly emaciated.

Permission for a partial autopsy only was granted, so that an examination of the thoracic organs and central nervous system could not be made. Histological examination of the spleen showed that the capsule and trabeculae were moderately fibroid. There were sinuses in places considerably dilated. Large quantities of hæmosiderin were seen. In the liver there was no abnormality except for a moderately passive congestion and hæmosiderosis of the parenchyma near the midlobular areas. In the kidneys the capsule was moderately fibrosed. Much of the cortical epithelium showed degenerative and necrotic changes. In some of the tabules the epithelium had desquamated. There were numerous areas of connective-tissue overgrowth. In the adrenals there was marked vacuolation of the cells of the fascicular and reticular zones. A moderate fibrosis was evident in the pancreas. There was considerable overgrowth of connective tissue in the prostate. The epithelium of many alveoli showed marked proliferation and penetration of the basement membrane. In some places evidences of alveoli were seen, but in many other places the epithelial masses were solidly formed. The retroperitoneal lymph-nodes were all of the same general structure. The connective tissues showed some overgrowth, and between these trabeculae there were large and small masses of cells with vesicular nuclei, resembling closely the above-mentioned alveolar epithelium of the prostate.

The clinical diagnosis was sarcoma of the prostate. The pathological diagnosis was carcinoma of the prostate and retroperitoneal lymph-nodes; chronic interstitial splenitis and hæmosiderosis; passive congestion of the liver; chronic parenchymatous nephritis; hydronephrosis and hydrometer; chronic interstitial pancreatitis.

H. A. MOORE.

## MISCELLANEOUS

**Jones, R. L., and Simons, I.: The Serum Diagnosis of Gonorrhœal Infection.** *Urol. & Cutan. Rev.*, 1914, xviii, 359. By Surg., Gynec. & Obst.

The authors analyze carefully and tabulate their results in 206 cases of gonorrhœal infection. The technical considerations are thoroughly elaborated and their studies lead them to conclude that —

1. The blood test for gonorrhœal infection is even more accurate than the Wassermann reaction in lues.

2. That it is of the greatest value in chronic cases where gonococci are found with greatest difficulty.

3. The complications of gonorrhœa, such as acute and chronic epididymitis, chronic prostatitis, and



diseased adnexa in the female, have given 100 per cent of positive tests.

4. Chronic uncomplicated gonorrhœa will give a positive reaction. Those giving negative reactions are cured.

5. No non-gonorrhœic has given a positive test. Gonorrhœa is not a self-limited disease of comparatively short duration — 1 to 3 years.

6. A negative blood test is advisable in a candidate for matrimony who gives a history of previous gonorrhœal infection, even though apparently cured.

J. S. EISENSTAEDT.

**Seay, C. J.: The Value of Vaccines in Gonorrhœal Complications.** *Urol. & Cutan. Rev.*, 1914, xviii, 348.  
By Surg., Gynec. & Obst.

After five years' experience with vaccines in gonorrhœal lesions and complications, Seay reports results in acute gonorrhœal epididymitis and gonorrhœal arthritis. His results were negative in acute and chronic anteroposterior urethritis. He starts with an initial dosage of twenty-five million and increases the dosage every fourth day.

J. S. EISENSTAEDT.

**Eaton, C. E.: The Internal Secretion of the Sexual Glands.** *Northwest Med.*, 1914, vi, 212.  
By Surg., Gynec. & Obst.

The author believes that resistance to cancer is a natural asset in the fortifications of the body. The absence of this protective power means susceptibility to cancer and is in some way associated with interference with, or absence of, the internal secretions of the reproductive organs. H. L. SANFORD.

**Kirk, T. S.: On the Value of the Bacteriological Examination of the Urine.** *Med. Press & Circ.*, 1914, cxlix, 62.  
By Surg., Gynec. & Obst.

The most interesting cases mentioned by the writer were a number of cases of empyema under his care last year. There were 2 due to a pneumococcus; one due to the bacillus coli; 3 due to staphylococcus. In 2 of the latter there were staphylococci in the urine; all the others had sterile urine. Those with sterile urine improved much faster than the others. In fact, one of those with staphylococci in the urine has not improved at all in spite of vaccine and other treatment. The bacteriological examination of the urine may, therefore, be of use, not only as regards diagnosis, but also as regards prognosis.

In January of last year a young man was in the author's ward. This patient had a simple fracture of the ulna and a dislocation of the head of the radius. The latter could not be reduced under an

anæsthetic, although an effort was made to do so twice. The question of reduction by operation had then to be considered. This patient had a scaly condition of the skin, and his urine contained many staphylococci, and these were not affected by a six months' vaccine treatment; consequently, the author refused to operate on him, as he felt sure the wounds would suppurate. While the author was ill a colleague, whose aseptic technique is above suspicion, operated on him, and was disappointed to find that the wound suppurated; thus the result anticipated from the condition of his urine actually occurred.

These cases prove that the examination of the urine is of undoubted value in many cases, although it is still only on trial. The author does not claim that it is an infallible guide to the nature of an infection; unfortunately, he has come across cases of infection with many suppurating foci, in which nothing has grown from pus, blood, or urine; i. e., an effort to grow anything has failed, probably on account of ignorance of proper methods. Kirk is of the opinion that bacteriological examinations of the urine are of especial importance in cases of injuries and operations, and he hopes we may soon have some simple and sure way of detecting the presence and nature of infective micro-organisms in our patients, and thus provide the complement to Listerism. In Listerism, as practiced to-day, every precaution is taken to prevent the entrance of micro-organisms into wounds, but no cognizance is taken of those in the patient's system, and it is for this reason that so many differences are found in the ritual of aseptic surgery, and why they all now and again break down. It is a well-known fact that blood infections cause suppuration in hæmatomata and other injuries unaccompanied by any external wounds, and there is no reason why a similar infection should not play havoc with operation wounds.

H. A. MOORE.

**Barnett, C. A.: The Question of Vaccines in Urogenital Infection.** *Urol. & Cutan. Rev.*, 1914, xviii, 353.  
By Surg., Gynec. & Obst.

Barnett uses autogenous vaccines in infective lesions of the urinary tract always after having made sure that drainage is good. He does not usually go through an elaborate bacteriologic technique for determining either the variety, number, or possible admixture of organisms, but merely cultivates from the pus or prostatic secretion, kills the culture and dilutes with salt solution, using the degree of skin reaction, at the site of injection, as a guide to dosage. He aims to keep this dosage just below the reaction dose. He reports good results.

J. S. EISENSTAEDT.

## SURGERY OF THE EYE AND EAR

### EYE

**Calhoun, F. P.: Hereditary Glaucoma Simplex; the Report, with Operative Notes, of Three Generations of One Family.** *J. Am. M. Ass.*, 1914, lxiii, 209. By Surg., Gynec. & Obst.

Heredity is shown to be a strong factor in the causation of glaucoma simplex, especially in patients under thirty years of age, and after extensive reviews of the literature the author failed to find more than four families in which it extended beyond the second generation. In two of the cases mentioned he is not sure of the diagnosis, but makes it in these cases on the contracted field for colors and the strong family histories.

Out of thirteen operations on nine eyes, iridectomy and the LaGrange operation did not give the results that those of trephining gave.

In all the cases operated, however, the patients were allowed to return to their homes immediately following the operation.

No new etiologic factors of importance were found, but the author decries the fact that heretofore so few corneal measurements were taken in such cases. SYDNEY WALKER.

**Posey, W. C.: The Value of Miotics in Chronic Glaucoma.** *J. Am. M. Ass.*, 1914, lxiii, 219. By Surg., Gynec. & Obst.

Through the study of a long series of cases for a great many years, the author has proved to his satisfaction that simple chronic glaucoma is more amenable to medical treatment than to surgery, and that central vision was maintained longer in these cases than in eyes in which an iridectomy was performed. What the results of the trephining will be is not known and only time will tell.

The value of miotics is pointed out in early cases, when the risk of operations and errors of diagnosis are possible. He frankly states that he does not consider miotics a curative procedure, as the process of the disease goes on with them, and warns us that they should be used only in those cases which are free from glaucomatous congestion, advising iridectomy in the latter.

Small doses of the miotics are given at first to prevent spasm, and increased gradually over a long period. Along with them purges, salicylates, and accurate refraction is advised. SYDNEY WALKER.

**Perrine, J. K. M.: A Case of Staining the Conjunctiva with Indelible Ink.** *J. Ophth., Otol. & Laryngol.*, 1914, xx, 290.

By Surg., Gynec. & Obst.

The case reported is of interest because the chemical composition of the ink splashed into the

eye was known to be methyl-violet and the stain was removed by the use of 50 to 75 and 95 per cent alcohol after cocainizing the eye. The reaction was not great. E. B. FOWLER.

**Crockett, R. L.: Some Cases of Staphylococci Infection of the Eye Treated by Immunotherapy.** *Arch. Ophth.*, 1914, xliii, 379.

By Surg., Gynec. & Obst.

In the first case reported the first eye was lost through panophthalmitis and from the pus a vaccine was made. One month later the other eye became affected by an iridocyclitis. Improvement followed the first dose of the autogenous vaccine (1,000 million staphylococci) and the eye had completely recovered after the fourth dose.

The second case was an iridocyclitis following cataract extraction. The suspension was made from a culture (staphylococcus) from the discharge of a cystitis. Dianin and atropine had given little relief over a period of two months, but improvement was noted after the first dose of the vaccine and the eye was quiet after the third.

A case of iridocyclitis in which the cause could not be determined, responded immediately to a stock vaccine of staphylococcus. E. B. FOWLER.

**Dufour, C. R.: Malignant Intra-Ocular Tumors.** *Wash. M. Ann.*, 1914, xiii, 255.

By Surg., Gynec. & Obst.

Choroidal sarcoma, a tumor of adult life, usually pigmented, is discussed as to stages, diagnosis, and urgency of enucleation. The chances of recovery after removal decrease with the age of the patient. The author values transillumination highly in diagnosis.

Gloma, the retinal tumor of early childhood, is discussed along the same lines. Other forms of malignant growth were omitted because of infrequency of occurrence. Cases were cited by the author and those entering the discussion.

E. B. FOWLER.

**Meller, J.: The Lagrange Sclerectomy and the Elliot Trephine Operation.** *Ophth. Rec.*, 1914, xxiii, 342. By Surg., Gynec. & Obst.

Meller, of Vienna, has recently published a report based upon 389 Lagrange operations and 178 sclerocorneal trephinings supported by the microscopical examination of a number of globes removed after failures. He states that the great advantage of the Elliot operation is that its technique is so much more easy. In not a single case of the 178 was there an injury of the lens.

He compares the two operations, dividing his



cases into two groups: (1) Good results, Lagrange 69 per cent, Elliot 72 per cent; and (2) bad results, Lagrange 8.4 per cent and Elliot 2.4 per cent. Complications, such as lens opacities, severe iridocyclitis with atrophy of the globe, expulsive hæmorrhage, etc., not at all frequent after the Lagrange operation, are scarcely met with after trephining. He finds a tendency after both operations for the iris to block the wound, and is in favor of a complete iridectomy in the Elliot operation.

The percentage of vitreous loss is 3.4 per cent after the Lagrange and 2.8 per cent after the Elliot, and he finds that vitreous prolapse after the Lagrange is a much more serious complication than the escape of a bead of vitreous from a small trephine opening. To show the genesis of relapses, he compares the figures found in the two operations. (1) After total iridectomy: Lagrange 9.3 per cent, Elliot 7.5 per cent. (2) After peripheral iridectomy: Lagrange 11.8 per cent, Elliot 18.7 per cent; and (3) without iridectomy: Lagrange 20 per cent, Elliot 23 per cent. He therefore inclines to the view that iridectomy is more important than Lagrange or Elliot consider it to be.

With an equally high percentage of excellent results, the Elliot operation has a much smaller percentage of bad results than the Lagrange. Further points in its favor are the considerably easier technique and the much smaller number of complications, especially in the severe forms of acute and absolute glaucoma. With the Elliot operation only 15.4 per cent of the absolute glaucoma cases ended badly, while 38 per cent of such cases were lost entirely after the Lagrange operation.

As to indications, Meller says the situation has been simplified to an extraordinary degree by the introduction of the Elliot operation. It is indicated in all cases of glaucoma, in acute as well as in chronic and simple; in secondary glaucoma, and especially in those cases of increased tension which have developed after the performance of other operations. It can likewise be recommended for hydrophthalmus, for it is attended with less danger than an iridectomy, or even a sclerectomy. The height of the tension has no effect upon the course of the operation or upon the development of complications, and especially not that bad effect which high tension must have in all methods of operating in which the eye is opened by a section.

FRANCIS LANE.

## EAR

Sheppard, J. E.: *The Economic Importance of Diseases of the Ear in School Children.* *N. Y. St. J. Med.*, 1914, xiv, 368.

By Surg., Gynec. & Obst.

The following reasons are given by the author for considering diseases of the ear of economic importance:

1. In their acute forms they lead to a certain amount of absence from school, and absences are a most potent factor in retardation.

2. In their suppurative forms they become a distinct menace to the life of the individual.

3. In their more chronic forms they result in defective hearing, the physical defect constituting the greatest bar to progress in school.

4. Through impairment of hearing they cause a large proportion of the total number of defectives and incorrigibles, truants, and idlers, of whom some go later to join the ranks of the criminal classes, becoming an expense and a charge to the State in reformatories and prisons.

5. Through impairment of hearing they swell largely the ranks of the so-called "repeaters," to educate whom costs an entirely disproportionate amount, besides interfering materially with the education of their normal-hearing classmates.

6. By virtue of their causation, and through the impairment of hearing, they are an element in the production of stoop shoulders and flat chests, which result in increased liability to tuberculosis.

7. Finally, sufferers therefrom with impaired hearing require for their adequate education separation from the normal-hearing, and teaching in limited classes, and, with extreme deafness, residence and teaching in special institutions, where articulation and lip-reading must be taught in order to avoid the otherwise resulting deaf-mutism.

OTTO M. ROTT.

Dwyer, J. G.: *The Bacteriology of Chronic Purulent Otitis.* *Am. J. Surg.*, 1914, xxviii, 257.

By Surg., Gynec. & Obst.

The discharge was investigated with special reference to (1) the bacterial flora, (2) the cellular elements, and (3) the matrix.

As to the bacterial flora, in 53 cases examined, the following organisms were found:

*Staphylococcus pyogenes aureus* — 17 times.

*Staphylococcus pyogenes albus* and *citreus* — 6 times.

*Streptococcus mucosus* — 8 times.

*Streptococcus hæmolyticus* — 8 times.

*Pseudodiphtheria* (Hoffman's and Xerosis) — 15 times.

*Pyocyaneus* — 16 times.

*Proteus* — 5 times.

*Klebs-Löffler* — once.

*Bacillus mucosus capsulatus* — 3 times.

As to the cellular elements, two groups are recognized: (1) epithelial and (2) mesoblastic. The epithelial cells are meatal, tympanic, and glandular; and the mesoblastic cells may be divided into the wandering and the fixed cells. The former comprise the leucocytes, the lymphocytes, and the plasma-cells; and the latter are represented by the epithelioid elements, which are derived from the lining of blood and lymph-channels and also from the perivascular spaces of the arterioles.

As to the matrix, flat rhombic crystals of cholesterolin and the fatty acids, characteristic of old desquamative changes in cholesteatoma, are found.

As to the diagnostic and prognostic significance of

these findings, the author gives the following summary:

As most frequently happens, granulation tissue is responsible for the pus. Evidence of this is afforded by the presence of leucocytes of all kinds—large, small mononuclear and polynuclear, normal and degenerated, but especially by lymphocytes, which are very numerous, while epithelial cells are not uncommon. Bone disease may be marked by the presence of myelocytes or osteoblasts, or chemical analysis shows the presence of an increased amount of bone salts.

Cholesteatomata is indicated by the presence of closely packed squames with or without bacteria, a distinction that may at first glance appear unnecessary, but is really of great importance, especially when the cells are of antral origin, for a septic cholesteatomata in that situation affords a stronger indication for radical measures than a non-septic one.

Among chronic discharges one is found which deserves special attention—it is very profuse, foetid, opaque, and like cream. On examination it is generally found entirely free from cells, either epithelial or septic leucocytic, but consists of throat organisms in an albuminous matrix—not true pus, therefore, but a polymicrobial emulsion. With such a discharge, in which there are spiral and fusiform bacteria of many varieties and no cells, the existence of an active granulation surface can without doubt be excluded. Thus here active aural measures, and measures to do away with the original infection, are called for.

OTTO M. ROTT.

**Bryant, W. S.: Radium in Middle Ear Deafness Caused by Chronic Suppuration.** *N. Y. M. J.*, 1914, c, 7.

By Surg., Gynec. & Obst.

The author reports a case of chronic suppurative otitis media of several years' duration, treated with mesothorium bromide, in which the hearing improved and tinnitus stopped.

ELLEN J. PATTERSON.

**Hays, H.: Latent Mastoiditis.** *Am. J. Surg.*, 1914, xxviii, 265.

By Surg., Gynec. & Obst.

The author illustrates his paper by reports of two cases, in which the symptoms usually evident in acute mastoiditis subsided, but in which operation was justified because of the long-continued and profuse discharge.

Another sign that indicates the progress of the disease is a sagging of the posterosuperior quadrant of the drum.

The discharge is kept up apparently by the in-

flammatory reaction within the mastoid cells, which cannot be properly cleaned out, plus the continuous application of low-grade infecting bacteria.

OTTO M. ROTT.

**Haskins, W.: The Use of Vaccine in Chronic Ear Infections; with Report of Cases Treated.**

*Am. J. Surg.*, 1914, xxviii, 253.

By Surg., Gynec. & Obst.

The author reports the results of the treatment of 33 cases with vaccines as follows: Two are noted as final "results unknown," owing to the patients' failure to return after their ears became dry; 8 were improved and are still under observation; 23 have dry ears and are seen about every two weeks. Because most of the cases have been seen for the past five months only, this report is considered as a preliminary one, but the author is convinced that most excellent results have been obtained with the vaccines, especially since many of the cases had resisted all other efforts, even failing to dry up after operation.

Two tables are appended; one gives the bacteria that were isolated in each case as the probable cause of infection, and the other gives a brief history of each case treated with vaccines and present results.

OTTO M. ROTT.

**Brown, H. B.: On the Treatment of Furunculosis of the Ear with Vaccines.** *Am. J. Surg.*, 1914, xxviii, 260.

By Surg., Gynec. & Obst.

The chief points emphasized by the writer are (1) the necessity of using the right vaccine, by which is meant an autogenous vaccine, and (2) the necessity of making a correct diagnosis before beginning treatment. The technique employed is as follows:

1. Irrigate the canal with boric acid or saline solution.

2. Wipe clean with cotton.

3. Plug the canal with cotton impregnated with 95 per cent alcohol for 15 minutes.

4. Remove the cotton and aspirate the pus through the perforation by means of Siegel's otoscope.

5. Streak plates are then made on blood agar and ascitic fluid agar with a platinum needle or loop.

6. Incubate for twenty-four hours.

7. Colonies are then fished and recovered on slant agar or on Dorset's egg media to which a little ascitic fluid has been added.

8. Prepare vaccines in the usual way from the pure cultures.

Seventy-five cases are reported without a failure.

OTTO M. ROTT.



# SURGERY OF THE NOSE, THROAT, AND MOUTH

## NOSE

**Pilcher, J. D.: The Absorption of Epinephrin from the Nasal Submucosa.** *J. Am. M. Ass.*, 1914, lxiii, 208. By Surg., Gynec. & Obst.

Experiments upon dogs prove that on account of the great vascularity of the parts epinephrin injected into the nasal mucosa passes directly into the venous circulation and should, therefore, be avoided in persons in whom a sudden rise of blood-pressure is especially contra-indicated. This method should be remembered, however, in conditions of circulatory collapse when the intravenous method is not feasible.

ELLEN J. PATTERSON.

## THROAT

**Stickney, O. D.: Tonsillar Hæmorrhage and Its Treatment.** *J. Ophth., Otol. & Laryngol.*, 1914, xx, 298. By Surg., Gynec. & Obst.

The author considers the predisposing causes of hæmorrhage to be hæmophilia or other blood state attended with diminished coagulability; age; operating during the menstrual period; the use of sharp instruments; the incomplete removal of the tonsils; operating during acute inflammation of the tonsils; and anomalous distribution of blood-vessels.

He controls hæmorrhage during operation by firm pressure with a tampon of sterile gauze, grasping the bleeding points with hæmostats, or by suturing the anterior and posterior pillars together. If the bleeding be in the nature of general oozing, he advises the hypodermatic injection of normal horse serum. The tendency to secondary hæmorrhage can be avoided by rest, careful diet, and cleanliness of the throat following operation.

ELLEN J. PATTERSON.

**Richardson, C. W.: Laryngitis Submucosa Subglottica Acuta.** *Laryngoscope*, 1914, xxiv, 658. By Surg., Gynec. & Obst.

The above is an affection occurring most frequently in children. It is characterized by a moderate degree of inflammation in the hypoglottic portion of the larynx, subchoroidal swelling, and narrowing of the lumen, upon which depends the intensity of the symptoms.

The general symptoms are not marked, the voice is never markedly affected, but in the more severe cases the breathing becomes stridulous with cyanosis.

The prognosis is favorable when treatment is instituted early, although intubation is indicated in some cases.

ELLEN J. PATTERSON.

**Johnston, R. H.: Straight Direct Laryngoscopy, Bronchoscopy, and Œsophagoscopy.** *Am. J. Surg.*, 1914, xxviii, 273. By Surg., Gynec. & Obst.

In this paper the author confines himself to the subject of tracheobronchoscopy, which he discusses under the following subheadings: (1) Historical; (2) General Remarks; (3) Choice of Instruments; (4) Choice of Method; and (5) Technique.

1. Although Killian was not the first to pass a tube into the trachea, nevertheless he receives the credit because he put it on a working basis. Killian was, however, the first to devise a means of entering the bronchial tubes.

2. As small a tube as possible should be used. It is possible to see two inches in front of the tube, but judging of distances is difficult.

3. The author prefers Jackson's instruments because the light is better for working far down in the bronchi. Another point in favor of the Jackson tube is that with it there is an open surface to work through. But whatever set is decided upon, it is best to stick to one set, for the operator can do the best work with the instruments that he is accustomed to using.

4. Several factors enter into the consideration of the choice of method as to whether upper or lower bronchoscopy should be done. The following is from the authority Bruning:

"For instance, lower bronchoscopy would be the method of choice in a patient who already had an opening in the trachea at the time of examination, unless it were desirable to study the lumen image of the trachea in the neighborhood of the tracheal opening. Again, if a tracheotomy would promise other than endoscopic advantages, the lower route would be selected. Finally, the lower route would be selected in some cases even when the incision in the trachea was for no other purpose than that of passing the tube; as, for instance, (1) when the form and size of the foreign body make it uncertain whether it can be passed through the larynx; (2) when difficulties of presentation or loosening are anticipated; (3) when a moving body lies in front of the trachea; (4) when the operation is seriously imperiled through continuous irritability or secretion; (5) in infants; (6) when danger may be anticipated from cocaine or general anæsthesia."

The author takes exception to several of the above remarks and gives as his views:

1. That the upper operation is more popular in this country and, in the average case, is just as easy to carry out as the lower.

2. That lower bronchoscopy is not technically easier when the difficulty of performing a tracheotomy in a child is considered.

3. That there will be less need of lower bronchoscopy when the operator has trained the eye to work through small tubes.

4. That even in infants the upper operations can sometimes be performed by using a laryngoscope and passing a forceps through the cords. This of course can only be done if the foreign body is high up in the trachea.

5. Boil the metal instruments and immerse light carriers in carbolic acid. Wash out the mouth with a 30 per cent solution of alcohol.

Do not pass a tube into a tracheal wound, that has been passed through the mouth, without resterilizing it.

In performing lower tracheobronchoscopy, which may be done through high or low tracheotomies, if for the purpose of removing foreign bodies, inspect the wound at once; otherwise it is best to wait a few days before inspecting the trachea. Use an 8-inch tracheoscope. Anæsthetize with 20 per cent alypin. Pass the tube from either side, inclining the patient's head to the opposite side. To examine the right bronchus introduce the tube from the left side of the neck and vice versa.

The author prefers to have the patient in the sitting posture.

The operator's eye should control every movement of the tube.

OTTO M. ROTT.

#### Ingersoll, J. M.: Primary Sarcoma of the Trachea.

*Laryngoscope*, 1914, xxiv, 664.

By Surg., Gynec. & Obst.

The author reports a case of sarcoma of the trachea, in which the pedunculated tumor was situated on the left side of the trachea, just below the first ring, with no indications of involvement of the tissues around the larynx and trachea. A portion of the tumor which was coughed up, when examined microscopically, showed spindle-celled sarcoma. The patient refused operation until too late, when a low tracheotomy relieved the dyspnoea until he died.

ELLEN J. PATTERSON.

#### MOUTH

#### Steinfeld, A. L.: Dentigerous Cysts. *Ohio St. M. J.*, 1914, x, 410.

By Surg., Gynec. & Obst.

The author briefly reviews the embryology of the teeth, pointing out that in the root portion of the tooth the cells of the enamel organ cease to form enamel and certain of them remain within the paradental membrane called by Malassez the paradental epithelial rests.

According to the classification of the author there are two kinds of cysts of the jaw considered; viz.,

follicular or dentigerous cysts and periosteal or root cysts. Follicular or dentigerous cysts usually occur in the second or third decades, and contain a fully formed tooth, a rudimentary tooth or toothlike remains and are not associated with any injury.

They grow slowly and may reach a very large size, seldom causing any pain. The bone not only expands over the cyst but also proliferates over the expanding tumor.

On palpation a hard wall with movable mucous membrane presents which at times on pressure upon the thin wall gives a parchment-like crackle. All varieties of teeth have been found in them, but molar and cuspid teeth are most commonly observed. The X-ray shows the course frequently directed toward the center of the cyst; at times the tooth is imbedded in the cyst wall.

Follicular cysts are associated with anomalies in the position of the teeth or absence of them in the arch.

The other variety or root cysts arise only after second dentition, and are due to irritation of gangrenous pulps of carious teeth.

The granuloma has a more or less firm periphery and gradually softens toward the center, which is the starting point of the root cyst. Malassez traces the source of both follicular and root cysts to a common origin; i. e., to the paradental epithelial debris.

When an irritant is present, this epithelial debris has the power of growing and forming teeth or their rudiments.

In root cysts the irritant is a toxic irritant and causes inflammation which so injures the epithelial cells that they lose their power of differentiation, and the mass is merely a mass of granulation tissue or a benign root-cyst.

In the follicular cyst conditions are different; here are disturbances in second dentition, anomalies in position, retention of teeth, and possibly disturbances of nutrition. These irritations are mechanical and not inflammatory, in consequence of which the highest function of the cells is not destroyed, and we have tooth substances formed.

The author reports a case of a 14-year-old girl who had a swelling of the upper jaw for more than a year. The cuspid was missing on that side. The X-ray revealed the tooth within the cavity; under general anæsthesia the tooth was removed and the cavity curetted and packed with gauze.

The cyst was found to be lined with stratified pavement epithelium; the semi-solid contents contained a large number of epithelioid cells in a homogeneous ground substance and a few cholesterol crystals.

H. A. PORTS.



# PROCEEDINGS OF SOCIETIES

## AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS

MEETING HELD AT BUFFALO, SEPTEMBER 15-17, 1914

**Crile, G. W.: The Kinetic System and the Treatment of Peritonitis.** *Tr. Am. Ass. Obst. & Gynec.*, Buffalo, 1914, Sept. By Surg., Gynec. & Obst.

An analysis of the leading phenomena of peritonitis—pain and tenderness, distention, muscular rigidity, vomiting, intestinal paresis—as well as of the general symptoms of infection—accelerated pulse and respiration, raised blood-pressure, fever, and rapid loss of strength and weight—show that they are adaptive phenomena evolved by the abdomen for the purpose of overcoming infection. For the peritoneum, through natural selection, has acquired the power of overcoming infection by immobilizing the point infected by (1) inhibition of the intestines; (2) distention of the intestines; (3) rigid persistent contraction of the abdominal muscles; (4) further fixation by the pouring out of a sticky glue-like fluid.

In peritonitis, as in physical exertion of any kind, the transformation of energy utilized for this purpose may be so rapid and extensive that exhaustion—death even—may follow. This exhaustion is further increased by the loss of water due to vomiting and to the diminished intake. As a result of this and of the increased blood supply to the intestines, there is a shrinkage in pulse volume, and the amount of urine is decreased coincidentally with the increased metabolism.

Safety, therefore, may lie in the control of the kinetic system, by which excessive energy transformation is retarded and the water equilibrium is maintained.

Deep morphinization causes inhibition of the intestines, immobilizes the body as a whole, prevents both pain and muscular rigidity, holds metabolism at a standstill, and thus reduces the drain upon the body's stores of energy. Therefore, if energy transformation be minimized by morphine given in large physiologic doses and if the water equilibrium be maintained by the installation of water, the point of infection is immobilized while the phagocytes overcome the infection, and at the same time the brain, suprarenals, and liver are protected and the energy of the patient is conserved.

**Marvel, E.: Plastic Operation for Correction of Cæco-Colon Stasis.** *Tr. Am. Ass. Obst. & Gynec.*, Buffalo, 1914. By Surg., Gynec. & Obst.

Delayed expulsion of fecal material is detrimental to health. Retention of such matter becomes a

bacterial and toxic menace. Deformities in, and malposition of, the intestinal tract predisposes to stasis. The cæco-colon sac is the most common part involved. The operation approximates the later and anterior longitudinal bands of the colon in such a manner as to elevate the cæcal pouch and obliterate same and reduce the caliber of the distended colon. The condition is physical and invites physical correction. The method suggested endeavors to correct the evil; conserve the structures; maintain the function and thereby occasion the minimum risk and inconvenience to the afflicted.

**Erdmann, J. F.: Biliary Surgery.** *Tr. Am. Ass. Obst. & Gynec.*, Buffalo, 1914, Sept. By Surg., Gynec. & Obst.

The author reports 270 patients, who were operated on from January, 1910, to April, 1914, with thirteen deaths. The majority of these patients were subjected to operative interference upon more viscera than the gall-bladder alone. This insures a greater risk as to mortality than individual operations would give.

The ages of the patients varied from 22 to 74. In 242 cases the sex was recorded and 154 were females. There were 54 cases of acute cholecystitis; 34 of gangrenous cholecystitis; and 115 of cholecystitis not otherwise classified. The last series included all varieties, from the non-inflammatory to hydrops. Acute hæmorrhagic pancreatitis with suppuration, or sloughing, was observed six times.

Cholecystostomy was performed in 125 cases with 5 deaths; cholecystectomy in 96 cases with 4 deaths; choledochotomy and transduodenal choledochotomy in 5 cases with 2 deaths; cholecystostomy with choledochotomy in 27 cases with 1 death; cholecystostomy with and without combined operations upon the duct in 142 cases with 6 deaths; and cholecystectomy with and without combined operations upon the ducts in 123 with 5 deaths.

In this series of 270 cases, 8 were operated upon a second or a third time. The author believes that the stones in each of these cases had re-formed. He reports several cases of this type.

Among the complications encountered may be mentioned appendicitis, duodenal ulcers, gastric carcinoma, fibroids of the uterus, acute pancreatitis, carcinoma of the papilla of Vater, perforated ty-

phoid cholecystitis, hydatids, and hæmolytic jaundice. Appendectomy was performed 67 times.

The cases are listed according to years, as follows:

In 1910 — 43 cases with no deaths.

In 1911 — 54 cases with 4 deaths.

(Deaths were due to septic endocarditis, pneumonia, acute hæmorrhagic pancreatitis, and embolism.)

In 1912 — 63 cases with no deaths.

In 1913 — 78 cases with 6 deaths.

(Deaths due to acute gastric dilatation, cardiac myositis, acute nephritis, purulent hydatid cyst, and to nephritis twice.)

In 1914 — 26 cases with 3 deaths.

(Deaths due to nephritis, embolism, and septic infarcts.)

The author does not believe in the two-step operation as a routine. He reserves it for those instances where a primary operation in ultraserious patients is done for drainage, and where the obstruction remains.

EDWARD L. CORNELL.

**Werder, X. O.: Myomectomy with Extensive Resection of the Uterus in Fibroid Tumors.** *Tr. Am. Ass. Obst. & Gynec.*, Buffalo, 1914, Sept.

By Surg., Gynec. & Obst.

In younger women the importance of saving the function of ovulation, menstruation, and, whenever possible, that of reproduction, is generally recognized. This can only be accomplished by proper surgical treatment; the X-ray treatment, the effectiveness of which is based upon the destruction of these functions, is, therefore, contra-indicated in women remote from the menopause. Myomectomy is the ideal procedure, and when this is impractical good results have been obtained by the writer by an extensive resection of the tumor-bearing myometrium and endometrium. One-half to two-thirds of the uterine body and cavity have been removed in these cases without destroying the menstrual function. Thirteen cases of this character have been operated upon without any mortality.

Myomectomy should be performed more frequently than is now practiced by most general surgeons and many gynecologists. While leaving, in most cases, a perfectly functioning organ, this operation, in the writer's experience, was accompanied by less mortality and morbidity than hysterectomy. Since 1898, 707 operations for fibroid tumors have been performed with a total mortality of 3.25 per cent; of these, 536 were hysterectomies with a mortality of 3.45 per cent, and 171 myomectomies with a mortality of 2.33 per cent. The death rate of these two operations in the writer's experience is, therefore, more than one per cent in favor of myomectomy.

**Carstens, J. H.: The Necessity of Constantly Looking for Cancer of the Uterus.** *Tr. Am. Ass. Obst. & Gynec.*, Buffalo, 1914, Sept.

By Surg., Gynec. & Obst.

Cancer is increasing, not by better statistics and diagnosis; those were pretty well made fifty years

ago. No cause is known and no remedy found, but we know that it is started locally, and by thorough early extirpation only can a cure be secured; hence diagnosis must be made early. If one woman out of eight dies of cancer, the physician must be constantly on the lookout for it. It can only be diagnosed with the microscope. Therefore all suspicious tissue must be examined carefully. Much curetting is done for various reasons and the tissues thrown away. The author looks upon this as absolutely criminal, as cancer is not only found at forty years and over, but it is being found earlier and earlier, even at twenty-one.

His conclusions are:

1. Every case of curetting should be examined microscopically. If it is done for miscarriage, it should be examined to show the remnants of placental tissue, and also because there might be the beginning of decidua malignum.

2. If curetting is done for hæmorrhage, it should be known whether it is due to conditions of the mucous membrane or whether it is constitutional. If it is done for irritating discharge, it is necessary to know the pathologic changes in the mucous glands.

3. In every case of curetting the tissue removed must be carefully examined microscopically. In every case of trachelorrhaphy the tissue removed should be examined in the same way for cancer.

4. The age of the patient cuts no figure, old or young; all tissues removed should be subject to the same careful microscopic examination.

**Yates, H. W.: The Significance of Uterine Hæmorrhage.** *Tr. Am. Ass. Obst. & Gynec.*, Buffalo, 1914, Sept.

By Surg., Gynec. & Obst.

The author's conclusions are:

1. That information should be disseminated to the public on the early signs of cancer, and that, as far as our knowledge goes at present, no other hope is offered for the cure than the scalpel used early.

2. That the cases reported, with few exceptions, indicate that the malady is not recognized as early as it should be by the physician.

3. That all uterine or supposed menstrual bleedings which are unusual to the host should command the keenest thought and observation.

4. That in a perfectly routine way all curettings should be submitted to a competent pathologist.

5. That pain has no part in early cancer; it is a complication and only follows after the disease itself should have been diagnosed.

6. That there is no such age as the cancer age. Too much emphasis has been placed upon this point in textbooks. Most of the cases referred to were among the young — two of them in mere girls. It is a sad commentary that young women are treated for weeks and sometimes months by "local treatment," so-called, when the causes of a disease are fast making inroads upon them and day by day



robbing them of their only opportunity of getting well.

7. Microscopy is the sovereign method in the diagnosis of cancer, especially as applied to the growth at the fundus. Its use can be dispensed with only in those cases in which the cervix is open and the protruding mass is unquestionably carcinomatous, or digital exploration is absolutely conclusive.

**Sanes, K. I.: Observation on Torsion of Ovarian Cyst.** *Tr. Am. Ass. Obst. & Gynec.*, Buffalo, 1914, Sept. By Surg., Gynec. & Obst.

The author divides the forces inducing torsion of ovarian cysts into intra-abdominal and extra-abdominal, some of which act suddenly, others gradually. The sudden forces are strained muscular actions and rapid volume-changes of surrounding organs; the gradually acting forces are the growth of the tumors themselves, especially of the different loculi in multilocular tumors and the growth of tumors of neighboring organs. A torsion to be pathological must be at least  $180^\circ$ , because a twist of less than that does not interfere with the circulation of the pedicle. A twist of the pedicle below  $180^\circ$  may, however, by increasing the venous pressure in the ovarian tumor, favor the gradual development of torsion, as proven by Payr. The frequency of torsion is usually given as 20 per cent. In his fifty-one ovariectomies performed in the last five years the author found nine torsions, or 17 per cent. He reports his 9 cases of torsion and gives his observations based on these 9 cases as well as cases collected from the literature.

The anatomical changes in a twisted cyst are proportionate to the degree and rapidity of the torsion. Usually the process is slow, causing venous stasis and serous transudation or hæmorrhagic infiltration of the cyst wall with an increase of the cyst contents. As a result of these changes the nutrition of the tumor is interfered with. A necrotic process, and with it a general toxæmia, is then introduced. Frequently a favorable termination of this process follows without any surgical interference. This is brought about by adhesions reëstablishing the circulation in the cyst by untwisting of the pedicle and by capillary extension. In very advanced cases favorable termination is occasionally seen as the result of a partial absorption and calcification of the cyst, or complete twisting off of the tumor and its attachment to the surrounding organs.

Reviewing his own cases, as well as cases collected from the literature, the author finds that torsion is more frequently right-sided, that it occurs most frequently in multiparæ, and that the most common age is between 30 and 40 years. The youngest patient was a two-year-old child and the oldest was sixty-seven years old.

As to symptomatology, it depends on whether the torsion comes on suddenly or gradually. In some cases the symptoms are so gradual in development that they are completely overlooked. In most

of the cases, however, the symptoms come on acutely and many of them give histories of previous attacks. The author saw one of his cases in the fifth and another in the sixth attack, both feeling well between the attacks. The acute attacks usually resemble peritonitis. The pains may start in the ovarian region, in the epigastrium, in the pelvis, or in the general abdominal cavity, and then shift to the seat of torsion. Frequently the pain radiates from the primary seat to other regions, most commonly to the inner side of the thigh. The pain in some cases is continuous, with slight exacerbations; in others it is short, sharp, and severe, reminding one of gall-stone and kidney-stone colic. Such cases show pronounced gastro-intestinal disturbances. Vomiting is met with most commonly at the beginning of the attacks. Constipation is almost a constant symptom and is sometimes so obstinate that a diagnosis of bowel obstruction is made. Abdominal distention and tenderness and, in bad cases, rigidity are rather frequently met with. The temperature and pulse are never very high except during the development of complications. Urinary symptoms, such as painful, difficult, and frequent urination, are found in a considerable percentage of cases, and the author explains it by pressure on the ureter. Uterine bleeding is sometimes complained of, possibly a result of passive congestion brought on by pressure on one of the ovarian veins. Symptoms of collapse and fainting are not uncommon and are attributed to intracystic or peritoneal bleeding from ruptured vessels of the cyst. The fluid in all such cysts is found bloody and in only one case of the series was free bloody fluid found in the peritoneal cavity.

The progress of torsion seemingly depends on whether or not the obstructed circulation of the cyst is reëstablished. If the circulation does not reëstablish itself, the necrotic process brings about a fatal termination from toxæmia. The removal of the necrotic cyst usually saves the patient, but they may die in spite of the operation from acute nephritis and sometimes from acute yellow atrophy. Such cases have been reported in the literature. In cases that do not undergo necrosis a fatal termination may be met with from rupture of the cyst or from acute injury to neighboring organs, resulting from their involvement in the twists or their necrosis from pressure by the tumor.

To diagnose cases of gradual torsion is not always possible. In acute cases, in which the previous presence of the cyst is known, a diagnosis should be easy. But when the presence of the cyst is unknown to the patient, the diagnosis may be difficult. The attempt should be made to decide whether the mass is an ovarian tumor, and if this is decided the symptomatology of torsion should ordinarily make the diagnosis. A history of frequent attacks of pain, out of proportion to the low temperature and pulse, is a valuable diagnostic point.

The treatment of torsion is, of course, ovariectomy. Pregnancy is not much influenced by the operation.



The cases of the author as well as those in the literature went to full-term and were delivered of living children. In cases of pelvic impaction of a twisted cyst the vaginal route, in the author's opinion, is best, and he cites the good result he obtained in one of his cases from such a vaginal ovariectomy.

**Stewart, D. H.: That Symptom Leucorrhœa.** *Tr. Am. Ass. Obst. & Gynec.*, Buffalo, 1914, Sept. By Surg., Gynec. & Obst.

The vagina has bactericidal powers which act in the presence of acidity. The quality sp. gr. and antibodies of its flow do not enable it to resist putrefaction, but give it a germicidal efficiency more than equal to four times its lactic acid content.

A persistent discharge is often due to lacerations and to burns. A caustic may peel off a sheet of membrane and include therein a surface infection (e. g. gono.), but it also opens the submucous spaces to the invasion of tissue melters (e. g. strepto. staphylo) which the epithelial layer once excluded.

Experimentation led to the use of a vulnerary in the vagina; i. e., a powder consisting of sod. cit. 1, alum  $4\frac{1}{2}$ , table salt 6, plumb. acetat. 9, and sugar to 50 parts. This has a high sp. gr. nearly 1600 (glycerin 1250), and compels a flow from a wound or mucous membrane; which fluid separates the powder into Wright's solution plus aluminum acetat. and throws down white lead. The results from its use are just what might be anticipated when tissues are exposed to a tranquilizing vulnerary, which is also an active germicide.

**Findley, P.: Observations in Obstetrics and Gynecology in Germany.** *Tr. Am. Ass. Obst. & Gynec.*, Buffalo, 1914, Sept. By Surg., Gynec. & Obst.

The striking features of the Charité clinic of gynecology and obstetrics in Berlin are the brilliant operating of Franz and the clever cystoscopic work of Fromme.

Franz operates 90 per cent of all cases of cancer of the cervix. His Wertheim operation is a most extensive dissection and consumes from 35 to 50 minutes. The features that facilitate his operative work are a wide transverse incision, retractors that expose an unusually large field of operation, a spotlight which permits of no shadows, exceptional support of an able corps of assistants, spinal anesthesia, and, above all, marvelous dexterity and precision in technique.

Fibroids are largely treated by the X-rays, excluding pedunculated submucous fibroids, degenerated fibroids, fibroids causing severe pressure-symptoms, and fibroids extending to the level of the umbilicus. Pelvic inflammations are treated by the Finsen rays and are seldom operated. The Alexander-Adams operation and vaginal shortening of the round ligaments are the operations of choice in retrodisplacements.

In obstetrics the Strogonof treatment of eclampsia is adhered to, with the result that in about 200 cases the maternal mortality has been but slightly

reduced and the foetal mortality raised from 17 to 47 per cent. Versions are proscribed in primipara, preference being given to cesarean section or craniotomy.

Pituglandol is used most effectively and is given in the vein. Puerperal sepsis is treated with the utmost conservatism.

**Harrar, J. A.: Scopolamine-Narcophin Seminarcosis in Labor.** *Tr. Am. Ass. Obst. & Gynec.*, Buffalo, 1914, Sept. By Surg., Gynec. & Obst.

Instigated by the recent sensational articles in the lay press on "painless childbirth," the writer wished to ascertain for his own satisfaction to just what extent he could condemn or extol the merits of the procedure. The experiment was approached with open mind and the technique of Krönig and Gauss of the Freiburg clinic followed in all its minutiae. It was appreciated that the previous bad results reported by the opponents of the measure depended chiefly upon three errors: first, a combination of scopolamine and morphine had been used not only for the initial dose, but for the succeeding doses as well; second, unstable and deteriorated preparations of the scopolamine had been employed; and, third, the erroneous notion had prevailed that the method was intended to abolish the sufferings of labor, whereas it is intended only to prevent memory of the event.

The technique followed in a hundred primiparae at the New York Lying-in Hospital was as follows: The cases were selected. Only women in whom a normal progress of labor was expected, and who were just beginning their labor, were used. The treatment was not started until the pains were recurring regularly every four to five minutes, and lasting thirty to forty-five seconds, as determined by laying the hand on the fundus and noting its contractions. The first injection consisted of 0.00045 scopolamine hydrobromide and 0.03 narcophin. Narcophin is a preparation of narcotine-morphine meconate and is claimed not to be as toxic as morphine. It is important to secure a stable and standardized preparation of scopolamine. Three-quarters of an hour after the first injection a second injection of 0.00045 scopolamine hydrobromide alone was given. The further dosage varied for each patient and depended entirely upon repeated tests of memory. Some women required much less than others. Half an hour after the second dose the woman was asked whether she had had an injection, how many, and where, or if she remembered a watch, or some simple object that was shown her at the time of the second injection. A note was made of her answer. Twice more at half hour intervals the memory was tested again. If the memory was still retained, a third dose of 0.0003 scopolamine was given. The third dose thus usually came about an hour and a half after the second. Further injections were given, depending upon whether the memory was retained, dubious, or lost. Abolition of memory was the result desired. Frequent observations of the uterine contractions,



and the maternal and fetal heart rate, were also noted and recorded upon a suitable chart.

As the object was to reduce sensory impressions as much as possible, the patient was kept in a dimly lighted room and all loud noises were avoided. A small quantity of ether was used as the head escaped over the perineum. The patient's face was kept covered at the time of actual birth, and her ears were occluded.

In 100 primiparæ complete amnesia was secured in 66 women; partial amnesia, hazy recollection with distinct alleviation of the woman's suffering, in 10. Of the remaining 24, 20 did not respond to the drug at all and 4 were too far advanced in the second stage to derive any benefit. It was impossible to get the patient under the influence of the drug after the onset of bearing-down pains.

In the majority of the failures the maternal pulse did not go above 100. In a majority of the successful cases the pulse rate ranged between 100 and 130. There were two stillbirths and one child died in the first twenty-four hours. One stillbirth was due to forceps extraction, with delay at the outlet for three hours with good pains, and the other to a short cord tightly wound around the neck. There were thirty-six lacerated perineums. Moderate post-partum hæmorrhage occurred eight times and severe hæmorrhage twice, controlled, however, without packing. Fœtal asphyxia occurred twice, requiring artificial respiration. Both babies survived. Delayed respiration occurred eight times.

These figures are compared with those of an additional hundred consecutive labors of primiparæ delivered without the use of scopolamine, in which there was one stillbirth and two deaths of babies within the first twenty-four hours, forty-seven lacerated perineums, moderate hæmorrhage thirteen times, and severe hæmorrhage twice requiring packing; fœtal asphyxia, requiring tubes and artificial respiration, occurred twice, and delayed respiration seven times.

The general effect upon the course of labor seemed to be a more rapid dilatation of the cervix than usual, with a delay at the outlet, and especially at the perineum. There was no prolongation of labor as compared with the hundred untreated primiparæ. Pituitrin was used with signal success to overcome this terminal inertia and to avoid the use of forceps.

From this limited experience the writer feels encouraged to continue the trial of the method. It seems fair to believe that in this is a valuable method of abolishing the woman's recollection of the ordeal of labor in from 60 to 70 per cent of cases. By conscientious, strict adherence to the technique, the possible dangers should be foreseen and avoided.

**Rongy, A. J., and Arluck, S. S.: The Use of Scopolamine Hydrobromide-Narcophin in Labor.** *Tr. Am. Ass. Obst. & Gynec.*, Buffalo, 1914, Sept.

By Surg., Gynec. & Obst.

In this paper the authors review the use of scopolamine with or without an opiate in obstetrics

since Steinbuchel's first experience in 1902. In their own work the method employed by Krönig and Gauss was followed accurately. After the patient was put to bed in a dimly lighted room, definite signs of labor being present, she was given 0.00045 gm. (1/160 gr.) scopolamine hydrobromide intramuscularly. This was preceded by a hypodermatic injection of narcophin, gr. 1/2. The effects were carefully observed with respect to pulse, respiration, pupillary reaction, fetal heart, and frequency and intensity of uterine contractions. Scopolamine was given again, same dose, one hour later, and memory tests were employed after another half hour. The repetition of injections was gauged by the degree of amnesia present, the average normal case requiring from five to seven injections. At the completion of the first stage, with the presenting part of the perineum, an injection of pituitrin was administered. As soon as the child was born the cord was quickly ligated and the infant removed to another room.

The writers' experience with this form of treatment consists of a series of 125 consecutive cases. Of these, 104, 83.2 per cent, showed complete amnesia with analgesia; 9, 7.2 per cent, showed analgesia without amnesia; and in 12, 9.6 per cent, the treatment failed to produce the desired effects. Narcophin was used in preference to morphine since it seemed to have the same sedative action as morphine without the depressant effect on the respiratory center.

In this series 102 babies, 81.6 per cent, cried spontaneously; 19, 15.2 per cent, showed varying degrees of oligopnoea; 4, 3.2 per cent, were asphyxiated. The total infant mortality was three deaths, 2.4 per cent.

Labor was terminated artificially in 15 cases, 12 per cent, there being two breech presentations and 13 forceps extractions. Ether was the anæsthetic used where artificial delivery was performed.

The authors have formulated their conclusions as follows:

1. Standard solutions are absolutely essential for the success of this treatment.
2. No routine method of treatment should be adopted. Each patient should be individualized.
3. Facilities should be such that the patient is not unduly disturbed.
4. A nurse or physician must be in constant attendance.
5. This form of treatment is carried out in hospitals, although there is no reason why it cannot be accomplished in well-regulated private homes.
6. It does not affect the first stage of labor, but the second stage is somewhat prolonged.
7. Pain is markedly diminished in all cases, while amnesia is present in the greatest number of patients.
8. This treatment does not in any way interfere with any other therapeutic measures which may be deemed necessary for the termination of labor.
9. Fœtal heart sounds must be carefully watched;

sudden slowing calls for immediate delivery when possible or the discontinuance of the treatment.

10. Oligopnœa was present in 15.2 per cent of cases. However, normal respiration was very soon established and no ill effects were observed.

11. No change in the course of the puerperium was observed and convalescence progressed very smoothly in the entire series.

Finally, judging from their observations and experience, the authors feel that this method of treatment should be given a fair trial. It is only a varied experience by competent men that will tend to settle this extremely interesting subject. It is the duty of the medical profession to set the public aright on this most important question. The authors believe that this method of treatment robs the woman of the agonies of pain accompanying labor and in addition instills within her a feeling of confidence which materially aids her to pass through this trying ordeal. The subject must be considered both from the medical and the humane aspect. If pain can be relieved, it is every physician's duty to do so, and no effort should be spared to accomplish that end. The comparative safety with which this drug may be used in competent hands justifies every obstetrician to give this form of treatment a fair test and convince himself as to its merits.

To condemn or advocate a given therapeutic measure without a thorough personal investigation is truly unscientific and not in accordance with the tenets of progressive American medicine.

CAREY CULBERTSON.

**Baldwin, J. F.: Treatment of Puerperal Thrombophlebitis.** *Tr. Am. Ass. Obst. & Gynec.*, Buffalo, 1914, Sept.  
By Surg., Gynec. & Obst.

After referring to previous papers by Williams, of Baltimore, reporting 5 personal cases with one death, and Jellett, of Dublin, reporting 5 cases with two deaths, the author reported 4 cases with one death. The object of the report was to describe the technique, which differed from that previously employed by surgeons. Williams advised ligation of the veins only, while Jellett resected the involved veins. The author recommended, instead, hysterectomy with ligation of the arteries only, the veins being left wide open for drainage into a gauze fluff, which filled the pelvis and was brought out through the vagina, the sigmoid being sutured all around to the pelvis, so as to completely isolate the peritoneal cavity. This gives the fullest drainage, with the least trauma, and removes the source of infection.

**Furniss, H. D.: Renal Damage from Calculi.** *Tr. Am. Ass. Obst. & Gynec.*, Buffalo, 1914, Sept.  
By Surg., Gynec. & Obst.

The paper consisted of the detail reports of 32 cases of renal and ureteral calculi, illustrated by 7 tables, 1 analytical chart, and 5 plates, with 29 illustrations made from radiographs. The conclusions, which are briefly abstracted, are:

1. Lithiasis is essentially a chronic disease, the average duration of symptoms in the author's cases being four and a half years.

2. In approximately 50 per cent of the cases more than one stone was present, yet in only two cases were stones found on both sides.

3. Stones situated in the calices, in the absence of infection or hæmorrhage, do little damage unless they are multiple or large, when pressure atrophy occurs.

4. Stones in the pelvis of the kidney or the ureter cause much pain and retention from blockage of the ureter. Infection soon takes place and serious renal damage ensues. Ureteral calculi that are small and smooth do not become impacted and are soon passed, causing little kidney damage. Stricture of the ureter frequently follows removal of ureteral calculi that have become embedded in the ureteral wall.

5. Infection and obstruction are the factors that cause the greatest damage. In 17 cases, where the function of the involved kidney was estimated, in only 2 was it normal; in 4 there was moderate loss of function, in 3 great, and in 8 complete.

6. In the 30 cases: in 9 there was pyelitis and pyelonephritis, in 5 hydronephrosis, and in 5 infected hydronephrosis.

7. Where there is great loss of function and infection, the other kidney being free of infection and competent, nephrectomy is the operation of choice.

8. In ureteral calculi with complete loss of kidney function, nephrectomy and ureterectomy to a point below the stone are recommended.

9. Radiography, first and always, is recommended and the promiscuous use of the ureteral catheter condemned, as it invites infection and is seldom necessary. Occasionally the use of the X-ray catheter, to demonstrate the position of a suspicious shadow, or the wax-tipped catheter is advisable where radiograph fails.

10. The relative renal functions are best determined by the observation, through an examining cystoscope, of the elimination of indigo-carmin after intravenous injection.



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# INTERNATIONAL ABSTRACT OF SURGERY

DECEMBER, 1914

## COLLECTIVE REVIEW

### THE X-RAY INVESTIGATION OF THE COLON

#### A REVIEW OF SOME RECENT LITERATURE

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FOR more than a decade the röntgen examination of the oesophagus and stomach has been extensively carried out in all the large clinics of Europe and, during the last half of this period, in the large American clinics. Pfahler was probably the first in this country to undertake extensive bismuth studies. The investigation of the colon by means of the X-ray is somewhat more recent, however, and only within the last two or three years has it been carried out with anything like the precision now attending the röntgen examination of the stomach.

The earlier studies of both the stomach and bowel were begun at a time when the question of ptosis of the abdominal viscera was receiving special attention. Hence the earlier gastro-intestinal X-ray studies were carried on with special reference to form and position, a circumstance which undoubtedly led the medical profession to attach undue importance to the form and position of the colon.

With increasing experience, the morphological factors have shrunk in importance, while the problems relating to the functional behavior of the alimentary tract have assumed greater significance. Of all the various facts which can be learned about the stomach or bowel by röntgen examination, the question of ptosis, at least in the opinion of the writer, is the last one thought of and the one given the least consideration. In other words, ptosis is looked upon as a symptom, rather than a causative factor, although it is con-

ceded that in certain cases the ptosis, although at first a symptom, may later become part of a vicious circle and thus assume importance as a causative factor. The technique of the X-ray examination of the colon has been so far perfected that, with an accuracy that is almost uncanny, it is now possible to locate the adhesions and membranous attachments, most of which bear the name of some special surgical investigator; and yet even here the X-ray examination serves a much more valuable purpose in ascertaining the degree of interference with bowel function than in merely locating the position of adhesive bands. As Skinner (1) has stated, the stomach and colon are not chemical retorts, but functioning motile organs, and the position of the gastro-intestinal tube does not so much concern us, as its functions do.

*Physiology of the colon* (2). The introduction of the röntgen method, especially the work of Cannon, which was carried out largely on animals, has thrown much light on the peristalsis of the colon. The writer's observations in man have almost to the minutest detail confirmed the work of Cannon on animals, especially in regard to antiperistalsis. Cannon showed that the prevailing movement in the proximal colon was antiperistalsis, consisting of a movement of waves backward toward the cæcum. These antiperistaltic waves do not run continuously for a long time, but periodically, although a series of waves at the rate of perhaps five a minute can be seen con-

tinuing for four or five minutes. The distal colon has as its characteristic activity an onward movement, several kinds having been described. Haustral churning is occurring constantly in the distal colon, serving to keep the material in this region thoroughly mixed with the digestive fluids. This haustral churning, or segmentation, is analogous to the segmentation which occurs in the small intestine. Other movements of the bowel are the large pendulum movements of Rieder (3), consisting of a considerable dislocation, turning, and winding of those portions of the colon which have a long mesocolon, all of which occurs without any actual transportation of the contents of the bowel. These snakelike dislocatory movements occur in everybody in various degrees and with varying frequency.

It is probable that the principal propulsive movement in the colon, serving to move the bowel content from the proximal colon into and through the distal colon, is the mass movement first described by Holzkecht (4). This is a most striking phenomenon, and, when once seen, can never be forgotten. The bowel contents suddenly lose their haustral markings and are formed into an ovoid, sausage-shaped mass with perfectly smooth edges, and rounded at the ends. This mass travels at about twice the rate of peristaltic waves in the stomach, the distance traveled varying with the circumstances. As the mass comes to rest, the haustral indentations reappear, quickly if the bowel content be semifluid, more slowly if the bowel content is of firmer consistency. It is estimated that these mass movements occur about six times daily. Further studies on this mass movement have been reported by Barclay, Hertz, and Jordan, and by the writer. Before the introduction of the horizontal fluoroscope, these large colon movements were rarely observed. Holzkecht (4), in 1909, reported two cases; Fischl and Porges (5), in 1911, two cases; Barclay (6), in 1912, two cases; Schwarz (2), in 1913, two cases; and the writer (7), in 1913, reported thirty-seven cases in which this mass movement had been observed. In recent times, however, especially since the horizontal fluoroscope has come to be more extensively employed, this type of onward peristalsis has come to be recognized as being very common. Hertz and Barclay have both informed the writer that they now see this form of peristalsis frequently.

The filling of the stomach and the movements of the colon by respiration are important factors in the shifting of the contents of the colon. The writer's statement (7) that the content of the

colon can be shifted very little, if any, by palpation, is confirmed by the observations of Schwarz (2), who declares that even with strong pressure it is not possible to lift the content of the ascending colon into the transverse. The same holds true of the distal portion of the colon. In a few cases only was Groedel (8) able to affect a movement of the contents of the colon for short distances with a vibrator in full action. The well-recognized favorable influence of massage and mechanical vibration must, therefore, be produced indirectly by increasing the tone of the bowel muscle, rather than by any actual mechanical pressure of the bowel contents onward.

Various authorities have constructed tables showing the rate of passage of the barium meal through the alimentary tract. Summarizing these observations, we may conclude that following a meal in which barium sulphate constitutes the opaque substance, the stomach should be empty within four and one-half hours, the head of the barium column having reached the cæcum at that time. The entire barium meal should have passed into the colon by the eighth hour, or at most the tenth hour, at which observation the head of the barium column should have reached the middle of the transverse colon. The head of the barium column should reach the descending colon from nine to sixteen hours following the ingestion of the meal, and the colon should be practically empty of barium at the thirty-sixth hour. No purgatives should be given on the day immediately preceding the examination. The barium meal should be substituted for one of the ordinary meals, so that the rhythm of meals will not be disturbed.

*Technique.* The contrast material may be introduced into the colon either in connection with a meal or by enema. The writer recommends study of the colon following the meal as being more likely to give accurate information concerning the function of the bowel, reserving the injection of the barium enema for those cases in which there is a question of gross obstruction (carcinoma, tumors, adhesion bands, etc.) and for testing the function of the ileocolic valve. Following the barium meal the studies of the colon may be carried out at the ninth, twenty-sixth, thirty-second, and fiftieth hours.

Others prefer the barium enema after the method of Haenisch (9). The Haenisch enema consists of water one liter, bolus alba 300 grams, bismuth carbonate 75 grams, and water sufficient to make one liter.

The writer's formula (10) is as follows: To  $2\frac{1}{2}$  dr. of gum tragacanth, add about 1 oz. of alcohol.



Shake well. Add 20 oz. of warm water, and shake. Add 3 oz. of barium sulphate, then 20 oz. of water, shaking well each time. This mixture should be made up fresh shortly before using.

Holzkecht and Singer (11) give the following formulæ: (a) Barium sulphate clyisma. To one liter of boiling water, a suspension of two soup-spoonfuls of finest potato starch in three-fourths of a liter of cold water is added, and after being boiled again, 160 grams of barium sulphate and one-quarter liter of hot water is stirred with it. The mixture is then boiled for five minutes and cooled off to 112° F. This mixture can be preserved in the icebox several days. (b) The bismuth clyisma. To one liter of boiling water, a suspension of two tablespoonfuls of finest potato starch in a quarter of a liter of cold water is added. This is boiled again for five minutes and 120 grams of bismuth carbonate stirred in three-fourths of a liter of cold water is added to it without boiling again.

Jaugeas and Friedel (12) recommend a paste, especially for the investigation of the rectum and sigmoid. The paste consists of a mixture of vaseline and oil in equal parts, to which barium sulphate or bismuth carbonate is carefully incorporated in equal parts. This preparation can be injected with a syringe. The quantity of the injection varies with the importance of the segment to be explored. A liter usually suffices to reach the splenic flexure.

The technique prescribed by Haenisch for the injection of the colon under fluoroscopic control has not been materially improved by any of the more recent writers. Before the injection it is important that the bowel shall have been cleared out very thoroughly by means of appropriate laxatives or by thorough enemas or both. The patient lying supine upon the trochoscope, the barium suspension is placed in a container two or three feet above the patient, and is allowed to flow by means of gravity through an ordinary enema tube and rectal point into the bowel. A colon tube is quite unnecessary, a rectal point passed two or three inches into the bowel being sufficient. The temperature of the clyisma should be 100° F. The progress of the clyisma should be watched inch by inch as it ascends the colon. A pause in its progress may be caused by a kink in the rubber tubing or a clogging in the tube. At opportune moments during the inflow of the clyisma, manipulation under the screen may elucidate special points. Haenisch advises, after the examination, that the container from which the injection has been made be lowered and the enema allowed to return by gravity. The emptying of

the colon is also watched under the fluorescent screen and additional information may thus be obtained as to the exact site of an obstruction.

In discussing the advantage of this direct röntgenoscopic observation of the opaque clyisma over the observation after an opaque meal, or the observation of the enema after it has been injected, Haenisch (13) insists that it is just the observation of the filling of the colon in all its stages which permits one to recognize abnormal conditions of intestinal caliber with the greatest accuracy.

Stereoröntgenography of the alimentary tract has been extensively utilized by many workers. This method has especial value in the study of the colon, particularly the pelvic colon.

*Colonic adhesions.* Pers (14), of Copenhagen, claims to be the first to describe a technique for the detection of colonic adhesions. It is certain, however, that many others have already used the method which he describes. It was employed by Pfahler at least two years before Pers' publication. Pers called attention to the fact that the most common causes of adhesions of the colon are (1) ulcerous disease of the colon; (2) inflammatory disease of the colon or other organs of the abdomen; (3) trauma of the peritoneum from operations; (4) the adhesions due to modern fixation operations. Although in some cases the adhesions cause no symptoms, they often announce themselves by pain and obstruction. Patients with colonic adhesions are much to be pitied because the adhesions are often not recognized. While the history may point out the probable diagnosis, there is much uncertainty; and we now know, especially through the work of Eastman, Hertzler, Jackson, and others, that extensive bowel adhesions may occur as the result of chronic intestinal stasis, without any history of a definite inflammatory process.

With röntgenography, and especially röntgenoscopy, we are now able to determine whether the bowel is adherent to its surroundings, the site of the possible adhesions, and, if operation for relief of adhesions is done, to ascertain how far the operation is able to restore the motility of the intestine. The most common site of pericolic adhesions is, as will be reiterated later, in the iliac and pelvic colon, especially about the ilio-pelvic junction.

It is important to emphasize here the necessity for proper protection during screen examination. Both Pfahler (15) and the writer (16) have published warnings against the careless use of the X-ray in fluoroscopic work. The tube-holders must be very carefully protected with lead or an



equivalent thickness of other X-ray protective material. The time of exposure of the patient during fluoroscopic examinations is likely to be unusually prolonged beyond the danger limit; hence the greatest care should be exercised to avoid over-raying of the patient. As Skinner has recently remarked, few röntgenologists know how to use the foot-switch, intimating that continuous illumination of the screen is usually unnecessary, although often practiced.

One of the most important advantages of the fluoroscopic method in the study of the colon is the possibility of guided palpation under the fluorescent screen. This may be accomplished by the protected hand, or, preferably, with some palpatorium not opaque to the X-ray. Among the chief purposes of this palpation under the fluorescent screen are the determination of mobility, the relation of various shadows, and the identification of points of pain on pressure in relation to the bismuth shadows. Whether or not loops of bowel can be easily separated, the mobility of the cæcum, the appendix, the transverse colon, the pylorus, and the descending colon are all points which may be studied by the aid of the palpatorium almost as well as by manual palpation. Only those who have experienced the satisfaction of palpating the bismuth-filled stomach and bowel under the fluoroscopic screen can fully appreciate visualized abdominal palpation under fluoroscopic guidance, but unless the greatest caution is observed to insure adequate protection in röntgenoscopic work, great suffering and even loss of life may result from the wave of enthusiasm for fluoroscopic work which is now sweeping over this country.

*Constipation.* The röntgen study of constipation and its causes has led to a number of classifications. The classification of constipation by Schwarz (2) considers the hypokinetic and dyskinetic forms. In the former there is a lack of muscular tone and motor stimuli; in the latter there is excessive motility and antiperistalsis to a marked degree. The writer finds that it is in these cases that ileocæcal valve incompetency occurs most frequently, the spastic constipation and increased antiperistalsis resulting in overdistention of the cæcum, which is directly the cause of the ileocolic valve incompetency. The marked spasticity of the bowel in these cases causes the intestinal content to be seen as small isolated masses. Hertz has added the term dyschezia for those cases where the colon is found to be normally active, the food passing through it and reaching the rectum in the normal time, the delay being due to an abnormally distended

ampulla with blunting of the defecatory reflex. There may also be cases of congenital dyschezia dependent upon some defect in the muscle sense of the rectum.

It seems to the writer that some of the cases of so-called dyschezia are really due to adhesions of the pelvic colon, especially adhesions involving the pelvirectal junction. These adhesions prevent the normal uprising of the pelvic colon during defecation. In the writer's opinion, the cause of constipation is to be found, in the majority of cases, in the colon below the crest of the left ilium, that is, in the pelvic colon and rectum, the marked spasticity of this portion of the bowel being found almost invariably associated with adhesions.

*Abdominal tumors.* The röntgen diagnosis of intra-abdominal tumors by recognition of the resulting dislocation of the colon was first described by Stierlin (17). Since then a number of others have utilized this method of diagnosis. The abdominal organs are not well adapted for direct röntgen reproduction. The same is true of intra-abdominal neoplasms, tumors, and abscesses. Aside from the liver, the spleen and the larger subhepatic and subphrenic abscesses, the abdominal viscera are not easily visualized. The intestines may be filled with ray-absorbing substances or with gas. Certain hollow organs, as the bladder and kidneys, have been filled with collargol.

Certain groups of intra-abdominal neoplasms may be studied, however, by their dislocation of the colon. This method is useful only for those tumors which are in the immediate neighborhood of the colon, particularly tumors of the kidney, pancreas, psoas abscesses, and retroperitoneal sarcomata. Tumors of the kidney tend to dislocate the colon toward the midline. Tumors of the spleen usually occur in front of the colon, without displacing it. Tumors of the pancreas and retroperitoneal sarcomata usually dislocate the transverse colon downward. Psoas and iliac abscesses are shown by typical median dislocation of the cæcum and ascending colon. In large uterine tumors, the pelvic colon is compressed, while the cæcum and ascending and, particularly, the transverse colon are lifted upward. In ovarian cysts, the dislocation of the pelvic colon is not characteristic. Morse (18) records an instance of a sarcoma of the left kidney which could be located by the appearance of a mass between the spinal column and the colon filled with bismuth.

*Ileocæcal tuberculosis.* In 1911, Stierlin (19) reported that he had found in the röntgen exami-



nation a new diagnostic method for the recognition of even the early stages of ileocecal tuberculosis. Schwarz (2) has recently voiced his unqualified approval of Stierlin's sign. Normally, it never happens that the ileum and also the transverse colon contain bismuth while the cæcum and ascending colon are empty. This vacancy in the shadow is not especially caused by the anatomical process, but by a hyperæsthesia of the excited mucosa, so that the colon does not permit the accumulation of the fæces, but frees itself promptly from it by visible contractions. Chronic ulcerative tuberculosis may occur in various portions of the colon, but it is usually combined with more or less severe strictures. These strictures may be ring-shaped, or may affect larger portions of the bowel which have the shape of a tube. The lung is usually involved in these cases.

*Colitis.* Catarrhal inflammation of the colon may be profitably studied by means of the X-ray, not so much to demonstrate the presence of the colitis as to show the portion of the bowel involved. Sometimes the spasticity attending the colitis involves the entire colon; more often it is localized to certain segments, as shown by the X-ray. Following the barium meal, the spasticity of the bowel is shown by the isolated, scybalous masses scattered throughout the segments. Following the barium injection, the spasticity is manifested by a narrowing of the smooth-edged shadow of the affected portion of the bowel.

Kienböck (20) cites Stierlin's statement that in ulcerative colitis the diseased portion of the bowel is always free from large quantities of barium and shows only a few long thin lines; the border lines of the intestine are parallel without the haustral markings, and they enclose between them a very clear area which has an increased gas content. Schwarz and Novascinski report similar findings. All of these authors regard the condition as hyperæsthesia of the quickly emptying colon with a small residue remaining upon the ulceration of the intestinal wall in long drawn out lines. Kienböck reports in detail three cases of ulcerative colitis — two with tuberculosis and one with dysentery.

In his conclusions he mentions the frequency of insufficiency of the ileocecal valve in these cases. This has already been referred to by the writer.

In cases of mucous colitis, one may occasionally actually show strings of mucus in the bowel, thanks to the opaque salt which seems to find lodging in the twisted mucous shreds.

*Appendix.* Among the earliest studies are those of Holzknecht, Fittig and Weisflog, and

Jordan (21). A paper by the writer (22), in 1912, was the first American contribution to the röntgenology of the appendix. Since then there have been studies by George (23), Quimby (24), and Imboden (25), and by Rieder (26), Schwarz (27), Groedel (28), Cohn and Grigorjeff (29), and others in Europe. The general conclusion is that the normal appendix may fill with barium following the ingestion of a barium meal and occasionally following the injection of a barium clysma. Provided the appendix fills, one may determine the presence or absence of adhesions, or kinks, or involvement of neighboring viscera, and the relation between points of pain on pressure and the appendical shadow may be judged.

The question of drainage seems to be most important. If the appendix fills and empties itself, it is not likely that the filling has any pathological significance. On the other hand, a poorly drained appendix possesses a potency for danger in proportion to the length of time it requires for emptying. Neither the acutely inflamed appendix nor the obliterated appendix can be shown following the barium meal. However, the conclusion is not warranted that the appendix is obliterated because it does not show in the röntgenogram. The appendix may lie retrocecal in such a manner as to escape discovery, even under the most careful fluoroscopic manipulation.

Dietlen (30) has described insufficiency of the ileocecal valve as an important symptom of chronic perityphlitis. This view is shared by a number of other European investigators. It seems, however, that chronic perityphlitis is only one of the conditions with which ileocecal valve incompetency is associated.

*Ileocolic valve insufficiency.* In 1897, Max Hertz, of Vienna, while performing abdominal massage on a patient for colic-like pains in the ileocecal region, observed peculiar symptoms which he could not explain otherwise than by the supposition that the contents of the cæcum might be pressed backward. After further studies on patients, as well as anatomical examinations, he described a symptom-complex of insufficiency of the ileocecal valve which could clinically be found only in such patients as had disturbances pointing to the bowel, such as constipation, abdominal pains, and sometimes diarrhœa.

Schwarz (2) makes the statement that "these findings remained unnoticed or unbelieving until Case, in 1911, first demonstrated röntgenograms showing the retrograde filling of the ileum after the barium clysma." In fact, the writer first called attention to this röntgen finding in 1909—

1910. Hænisch, Holzknecht and Singer, and Groedel soon confirmed these findings. Further articles have appeared on the subject by Dietlen (30), Rieder (3), Kellogg (31), Katsch (32), and the writer (33).

Insufficiency of the ileocæcal valve is best demonstrated by the retrograde filling of the terminal ileum by means of the barium enema following the evacuation of the barium enema by spontaneous defecation. Examination of the competency of the ileocæcal valve by means of the barium meal is unsatisfactory, although the writer has reported a series of more than sixty cases in which there was a reflux of ingested food from the cæcum back into the ileum.

The chief result of the incompetency is a prolongation of the emptying time of the ileum following the barium meal, although occasional cases will be found in which ileal stasis is due to stenosis of the valve or to kinks of the terminal ileum. Nevertheless, in the great majority of cases, in the opinion of Groedel (34), Kellogg, Schwarz, Jordan (35), the writer (33), and others, the increased stasis in the ileum is one of the direct results of ileocæcal valve incompetency.

In establishing the presence of insufficiency of the ileocæcal valve, Schwarz (2) uses irrigoscopy, taking care that only one liter of fluid is used, and that the irrigator is introduced only moderately high. Senn shows that even a normal valve may become insufficient by overdistention of the valve, and that any massaging maneuvers in the ileocæcal region are to be avoided. In order to make certain that the test will be absolute, the writer has, on the contrary, advised massaging maneuvers over the ascending colon in the antiperistaltic direction, and the introduction of a sufficient quantity of the enema to make certain that the cæcum has been distended. Otherwise, occasionally an incompetency of the ileocæcal valve will be overlooked during the röntgen examination, and be revealed later at operation.

The writer (33) holds that the insufficiency of the ileocæcal valve is a symptom dependent upon obstruction lower in the bowel, and is not a disease in itself. Kellogg (31), Schwarz (2), Groedel (34), Dietlen (30), and others are of the same opinion. The true cause of insufficiency of the ileocæcal valve is the abnormal lack of tone of the structures which make up the valve — chronic overdistention of the right half of the colon, particularly the cæcum, as the result of which the loosening of the connective tissue is quite natural. This distention of the right half of the colon is usually the result of chronic obstruction of the colon, due either to adhesions of

the pelvic colon or to severe colitis with spasticity, both of which conditions lead to increased antiperistalsis and distention of the cæcum. These conditions lead to stasis and chronic changes in the appendix. This observation led some European observers, particularly Groedel and Dietlen, to believe that there was a direct connection between insufficiency of the ileocæcal valve and chronic perityphlitis.

The writer (7) found insufficiency of the ileocæcal valve in one-sixth of fifteen hundred cases of constipation. Dietlen (30) found twenty-two cases out of one hundred. Singer and Holzknecht (11) found three out of fifteen. It seems that the percentage of cases of constipation presenting ileocæcal valve incompetency is nearly constant for different observers.

At the 1914 meeting of the American Medical Association (Section on Physiology and Pathology) the writer tabulated a series of twelve findings, most of them röntgenologic, which seemed to indicate beyond a doubt that the ileocæcal valve is normally competent, protecting the ileum from a reflux of cæcal contents. The first of these arguments is the observation first made by Cannon that the prevailing movement in the right half of the colon is antiperistalsis.

It is hoped that others will take up the study of this question, especially in children, to settle some of the questions which are not yet conceded by the surgeons.

*Mobile, atonic cæcum.* This condition, first described by Wilms, has been the subject of considerable study and no little controversy. Wilms, several years ago, gave up his operation for fixing the mobile cæcum. There is not sufficient space here to review all of the literature of this phase of the subject. Suffice it to say that much less importance is now being attached to the mobile, atonic cæcum, the general consensus of opinion being that it is the fixed, adherent bowel, rather than the mobile bowel, which is the seat of stasis and the source of symptoms.

*Abnormal position of the colon.* Congenital failure of the colon to rotate has been reported from the Mayo Clinic, by Stierlin, de Quervain, and several others. Hertz has reported one case of complete transposition of the viscera. The writer has seen one case. Doubtless there have been many unreported cases in which the röntgen examination has been utilized to demonstrate this anomaly.

Aberrancy of the sigmoid has been especially described by Pfahler. Special attention has been given the study of the pelvic colon by Pfahler, Jaugeas (12), and George and Gerber (36).



Aberrancy of the sigmoid is not especially abnormal, except through the enormous gas accumulations which are sometimes permitted. Pfahler shows that these gas accumulations may cause temporary obstruction by pressure against other loops of bowel.

Adhesions of the pelvic colon, especially about the iliopelvic junction, are more likely to be the real cause of constipation and resulting gas formation in these cases. The work of Eastman and others shows that extensive membraniform adhesions may result from extreme coprostasis without any visible constriction of the intestinal walls. Of course, these adhesions may also result from salpingitis and other forms of irritation of the pelvic peritoneum.

The method of Jaugeas (12) is especially valuable in revealing abnormalities of the pelvic colon. It is often extremely difficult to differentiate between the deformity of the colon resulting from extensive sigmoidal adhesions and the filling defects attending carcinoma.

*Carcinoma of the colon.* Schwarz (2) divides carcinoma of the colon into several classes:

1. Carcinoma with high grade stasis.
2. Carcinoma without stagnation of the contents of the colon.

In the first group, the patients present typical symptoms of chronic ileus. The abdomen is tense and expanded from the inflated bowel. The röntgen examination is indicated because the internist or the surgeon is not able to decide whether the obstacle belongs to the small or to the large intestine, a question upon the decision of which the manner and point of operative interference is considerably influenced.

It is probably wise to begin the examination in such cases with a barium enema, following it later, if necessary, by the ordinary barium meal. When the lesion is thought to be in the colon, the enema is likely to give the earliest information. The writer (37) has shown that even without the administration of barium it is possible, in most cases, to locate the site of the obstruction, thanks to the gas distention of the bowel almost universally present in these cases. If the central portion of the abdominal shadow is gas-distended, showing the peculiar, reticulated appearance characteristic of the small intestine, it is likely that the obstruction is not in the colon, but in the lower portion of the small intestine. If the cæcum and ascending colon are gas-distended, it is almost certain that the obstruction is in the colon and not in the small intestine.

In cases of obstruction beyond the hepatic flexure, the cæcum and ascending colon may form

an extremely dilated sack, the thickness of a man's arm, hanging low down into the pelvis. The content of the sack is usually fluid, and is easily recognized by its horizontal level, seen with the patient standing, which becomes undulating when the patient is shaken. Above this fluid level there is usually a high-grade gas-inflation of the hepatic flexure, interlaced with haustral lines. In the middle of the transverse colon there may be another accumulation of the liquid seen only with the patient standing. When the obstruction is in the pelvic colon, there may also be fluid levels at various points in the descending colon.

Except in the presence of stenosis, the colon can never contain such quantities of fluid. In cases of catarrh, or where there is liquefaction of the fæces in the colon, these liquids are soon emptied. Stationary spaces filled with fluid and gas are found only in stenosis, according to Schwarz.

Antiperistalsis, alternating with onward peristalsis, can be seen in the colon proximal to the lesion, associated with borborygmi. The liquefaction of the content of the colon can only be determined when the patient is examined in the upright position. If the patient is so weak that he can not stand, and it is necessary that the examination be made on the horizontal fluoroscope, a correct diagnosis can be made from the prominent, and sometimes really severe, distention of the colon. Even in this position, lateral studies, with the tube on one side and the screen on the other, with the patient flat upon his back, may serve to demonstrate fluid levels surmounted by gas accumulations. Severe, constant meteorism of the colon is a constant finding in organic colonic obstruction, although not pathognomonic of malignant obstruction.

In carcinoma of the large bowel, without stagnation of the content of the colon, the following may be stated as a summary of the findings (38):

1. Exaggeration of colonic antiperistalsis, giving the appearance of "peristaltic unrest" (Case) to the barium content above the site of the lesion, with arrest or hindrance in the onward progress of ingested barium.
2. Arrest or noticeable hindrance in the ascent of the barium column when giving the barium enema.
3. Coincidence of a palpable tumor with a point of hindrance to the barium meal or barium enema.
4. A filling defect in the shadow of the barium-filled colon. Frequently the filling defect is digitated, indicating a cauliflower growth. At times it may be annular so that one may diagnose an annular carcinoma.

5. The colon is often distended by gas and gas collections are seen surging backward and forward, owing to the alternations of peristalsis and antiperistalsis.

6. Marked ileal stasis when the neoplasm involves the cæcum, ileocaecal valve, or the first part of the ascending colon.

The hindrance to the ascent of the barium stream may be out of all proportion to the amount of actual obstruction. This seems hard to explain, owing to the fact that in nearly all cases the ordinary meal, as well as the barium meal, when taken by mouth, pass the tumor in compact as well as in liquid condition, whereas the lesion presents an almost insurmountable obstacle for the barium enema, causing the distal portion of the bowel to overfill, producing localized pain and tenesmus.

This difference between the behavior of the lesion to injecta and ingesta can be explained, according to Schwarz (2), only by the theory that the tumor has adapted itself, from the earliest stages, to the pressure of the stools from above, and that its funnel is shaped by the natural direction of the stools. On the other hand, the enema, which approaches suddenly from below, instead of from above, does not find the way prepared for this abnormal direction of passage, and the absolute resistance is established, thus giving rise to the picture of valve closure, because it occurs only retrogradely (*ventilverschluss*).

The overfilling of the portion of the bowel distal to the lesion, with localized pain and tenesmus, develops especially just below the point of stenosis. If the patient complains that the pain is severe, the irrigation should not be forced any further. Even the mere pressure from the irrigation might cause perforation of a disintegrating tumor.

One point to which attention is called by all writers on the subject is the necessity for repeating the examination after the lapse of a day or two, at least, in order to verify the findings.

One of the most important lessons pointed out by the foregoing summary of röntgen studies of the colon is that the X-ray investigation of any part of the alimentary tract must include a careful study of the entire digestive system. Just as in röntgenography of urinary calculi one does not feel justified in reaching conclusions without having carefully searched the entire urinary tract, so also in gastro-intestinal röntgenology one should not express any conclusions until the entire alimentary tract has been studied. The various segments of the alimentary canal present such an intimate interrelation governed by re-

flexes, not as yet any too well understood, that conclusions, especially when operative measures are to be based upon them, should be expressed only after the most thoroughgoing studies.

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# ABSTRACTS OF CURRENT LITERATURE

## GENERAL SURGERY

### SURGICAL TECHNIQUE

#### ANÆSTHETICS

**Gray, H. M. W.:** Discussion on the Evolution of the Shockless Operation — Anoci-Association. *Brit. M. J.*, 1914, ii, 349. By Surg., Gynec. & Obst.

The author considers the subject from the clinical side only. He has for many years been using local anæsthesia and looks upon it as the most important means "for the prevention of pains and therefore shock." He looks upon general anæsthetics, narcotics, and other precautionary measures merely as adjuvants to the local anæsthetic; and argues against needless and protracted preparation before operation. In order to exclude external impressions during immediate preparation and actual operation, after receiving an injection of omnopon the patient's eyes are covered with lint or cotton-wool pads and the ears are stopped with moist cotton-wool. Of the three general anæsthetics — chloroform, ether, and nitrous oxide — he thinks the latter in skilled hands is the best but that for general use the open drop ether method is preferable. His method of using a preliminary narcotic is as follows:

The night before operation a good night's rest is

assured the patient by giving 5 grains of veronal at 5 P. M. and again at 9 P. M. One and one-half hours before operation, two-thirds of a grain of omnopon is given with 1/150 grain scopolamine in 17 minims of water. This produces an agreeable indifference to what is taking place and apprehension is removed. Gray has long ago given up spinal anæsthesia; he relies on nerve-blocking and local infiltration. In abdominal cases he blocks the intercostal and lumbar nerves in the subcostal groove and as far back in the loin as convenient. To save time and prevent post-operative pain more certainly he infiltrates the skin and subcutaneous tissue along the line of incision. He is now using a solution of novocaine 0.25 per cent, potassium sulphate 0.4 per cent, and 12 drops of (synthetic) adrenalin to each 100 ccm. This was introduced by Hoffmann and Kochmann. Gray calls it an "N. P. A." solution — novocaine-potassium-adrenalin — "No-Pain-Atter." Of this solution 80 to 120 ccm. may be used. He states that in over 2,000 abdominal operations shock was present in only two — and in both cases dread of operation had dominated the patient's mind for weeks.

M. S. HENDERSON.

## SURGERY OF THE HEAD AND NECK

#### HEAD

**Bonola, F.:** Technique for Intraneural Injection of the Superior Maxillary Nerve at the Foramen Rotundum (Di una tecnica per le iniezioni neurotiche nel nervo mascellare superiore a livello del foro grande rotondo). *Bull. d. sc. med.*, 1914, lxxxv, 166. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author asserts that the previously described methods of injection of the superior maxillary at the foramen rotundum are too difficult and uncertain and sometimes too dangerous. These disadvantages are overcome by a new method of supramalar puncture, with a dull lumbar puncture needle, which has a curvature of 175 degrees, 2 cm. from the end, and is somewhat notched 5 cm. from the end. The needle is inserted at the angle between the ascending and horizontal branches of the zygoma, as near as possible to the horizontal branch,

and kept perpendicular to the horizontal branch, so that the concavity of the needle is directed upward. The needle must be carried in the same direction until bony resistance is felt at a depth of about 3 cm. This resistance is offered by the crista sphenotemporalis, which separates the temporal and zygomatic fossæ, and whose lower end must be found by gently pushing the needle downward. Then the needle is pushed farther in, to about 5 cm., so that the end of the needle reaches the highest point of the fossa pterygomaxillaris and the superior maxillary nerve.

The only uncertainty in the method is offered by possible anomalies of the crista, but these are rare, as in 500 autopsies they were found only 23 times, and they only interfere with the method when there is abnormal largeness of the crista. The method does not endanger any important nerves or vessels.

STRAUSS.

**Tschistjakoff, N. L.: Resection of the Upper Jaw in Malignant New-Growths** (Zur Frage der Resektion des Oberkiefers bei bösartigen Neubildungen). *Chirurgia*, 1914, xxxv, 187.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

This statistical work includes 77 cases of malignant new-growths of the upper jaw; 48 of them sarcomata, and 29 carcinomata from 1884-1912. Of the 77 cases, 45 of sarcoma and 25 of carcinoma were operated on; 7 cases were inoperable.

The ages of the carcinoma cases, 37.4 per cent, ranged from 40 to 60 years; the sarcoma cases from 10 to 20. The most frequent point of origin of the tumors was the mucous membrane of the alveolar process and the maxillary sinus, 28.5 per cent of the carcinomata and 42.5 per cent of the sarcomata originating there. Microscopical examination of the carcinomata showed 11 medullary carcinomata, 4 glandular, 1 alveolar, and 1 squamous-celled epithelioma.

The 36 sarcomata were distributed as follows: globular-celled 9, fibrosarcoma 8, osteosarcoma 7, osteoid fibrosarcoma 1, myxoid fusiform-celled 2, giant-celled 3, myxosarcoma 1, cystosarcoma 1, angiosarcoma 1, endothelial sarcoma 1, polymorphous-celled 1. Among the 25 operations for carcinoma 19 were complete resection, 1 of them bilateral, and 6 partial resections. Among the sarcomata there were 34 complete resections, 3 of them bilateral, and 13 partial ones. There was preceding ligation of the carotid artery in 8 cases. Dieffenbach's incision was used in 61 per cent of the cases; Kocher's, Weber's, and Langenbeck's in the others.

After the operation only 7 cases died, 15.5 per cent mortality; the cause of death was purulent meningitis in one case, embolus of the Sylvian fossa in 1, and acute anæmia in 5. Reports of the ultimate results could be obtained from only one-third of the patients.

Of the 19 complete resections the further fate of 10 is unknown; in 4 there was recurrence after 1 month, in 1 after 2 months, in 1 after 10 months, in 1 after 1 year and 9 months, and in 1 after 2 years and 4 months.

Of the 32 complete resections for sarcoma 7 died, as reported before; nothing is known of 10; in 2 there was recurrence while still in the hospital; 1 died of recurrence after 4 months, 1 after a year, 1 after 3 years and 10 months, 1 after 13 years, and 6 are still alive, one after 6 years, 2 after 7 years, 1 after 13 years, and 2 after 14 years — 53.3 per cent, therefore, remained without recurrence more than 3 years.

SCHAAK.

**Rinderspacher, K.: Value of Lumbar Puncture in Medicolegal Judgment of Head Injuries** (Die Bedeutung der Lumbalpunktion für die Begutachtung von Kopfverletzungen). *Fortschr. d. Med.*, 1914, xxxii, 405.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In patients who bring suit for head injuries and complain of headache, intolerance for alcohol, etc.,

especially when there are no objective symptoms and malingering is suspected, the author recommends lumbar puncture in the prone position. An increase in pressure indicates an anatomical lesion inside the skull, irritation of the meninges, or chronic serous meningitis. Normal pressure does not prove that there is no lesion, but shows that in cases that were positive at first the organic changes are no longer exercising an irritant effect on the meninges. It is important in differential diagnosis that in pure neuræsthenia the lumbar pressure be normal; on the other hand, it is increased on pressure, taking of alcohol, and often in anæmia and arteriosclerosis. It is important, with reference to later examinations, that the pressure of the cerebrospinal fluid should be determined and a microscopical examination made of it immediately after a trauma of the head.

GRASHEY.

**Dunn, A. D.: Pituitary Disease, a Clinical Study of Three Cases.** *Am. J. M. Sc.*, 1914, cxlvii, 214.

By Surg., Gynec. & Obst.

Dunn presents a clinical study of three cases of pituitary disease of different types. He emphasizes the value of good X-ray plates in obscure disorders of growth, of sexual development and activity, and in symptoms pointing to intracranial trouble. Disturbances of vision, migraine, epileptic attacks, psychical anomalies, and trophic disorders — such as obesity, infantilism, impotence, gigantism, dwarfism, menstrual disturbances without pelvic explanation — should call for an X-ray examination.

He concludes with a scheme of classification of disturbances of pituitary function, as follows:

1. Affections of the pars anterior:
  - a. Hyperfunction — acromegaly, gigantism.
  - b. Hypofunction — true or pituitary dwarfism — not chondrodystrophic, rachitic, or cretinic dwarfs.
2. Affections of the pars posterior:
  - a. Hyperfunction — diabetes insipidus.
  - b. Hypofunction — hypophysial obesity — dystrophia adiposogenitalis.
3. Mixed affections:
  - a. Hyperfunction of the pars anterior with hypofunction of the pars posterior — acromegaly with hypophysial obesity.
  - b. Hypofunction of both lobes — dwarfism with hypophysial obesity.
4. Hypophysial disturbance, in conjunction with perverted activity of other glands.
  - a. Ovarian or testicular hypofunction with:
    1. Hyperfunction of the pars anterior — acromegaly with sexual impotence — eunuchoid giants.
    2. Hypofunction of the pars anterior — pituitary dwarfism with sexual impotence.
    3. Hypofunction of the pars posterior — dystrophia adiposogenitalis.
    - b. Associated with disturbances of the functions of other ductless glands; i. e., adrenals, pancreas, thyroid, pineal gland, thymus (status thymolymphaticus), etc.

ROBERT H. IVY.



**Schleidt, J.: The Hypophysis in Feminized Males and in Masculinized Females** (Über die Hypophyse bei feminisierten Männchen und maskulierten Weibchen). *Zentralbl. f. Physiol.*, 1914, xxvii, 1170. By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

A report is given of the histological studies of a series of rats, consisting of sexually normal animals, castrated ones, and ones in whom, after castration, glands of the other sex had been implanted. As in these feminized and masculinized animals the effect of the generative part of the genital glands was excluded by the transplantation, and only the interstitial part was active, a study could be made of the question of whether the changes in the hypophysis after castration, described by Zacherl, were due to the lack of the generative or the interstitial part of the glands. The results were a decrease of eosinophile cells and the appearance of large vesicular cells with pale nuclei and vacuoles in the hypophyses of the castrated animals; on the contrary, in the masculinized and feminized animals the hypophyses showed the type of sexually normal animals, with the exception of one in which one of the implanted glands was completely absorbed—in this case solitary vesicular cells with vacuoles. This seems to show that the changes in the hypophysis after castration are due to the lack of the interstitial part of the male and female sexual glands. SALLE.

## NECK

**McKenty, F. E.: Tumors of the Neck.** *Surg., Gynec. & Obst.*, 1914, xix, 141.

By *Surg., Gynec. & Obst.*

Tumors of interest from an embryological or developmental point of view, occurring in the neck, are of great importance on account of their comparative frequency and difficulty of diagnosis. The records of the Royal Victoria Hospital during the past ten years showed 15 cases of branchiogenic cysts, 5 of branchiogenic carcinoma, 9 of thyroglossal cysts, and one carotid body tumor. A review of the embryology and development of the neck was considered rather in detail, in order that a better understanding of these tumors might be obtained. The main features discussed were the formation of the precervical sinus; the entire development of the thyroid from the floor of the mouth; the fate of the ultimobranchial bodies; and, finally, the development of the carotid body from the sympathetic system.

In reviewing the records of the cases reported, it was pointed out that the branchiogenic cysts are usually of slow growth but may suddenly increase in size on account of infection or malignant change. Branchiogenic carcinomata are very malignant and are most frequently found in those more than 50 years of age. In regard to thyroglossal cysts the frequency of recurrence was noted, due to the fact that the surgeon had not completely extirpated the cyst wall owing to difficulty in following it through

or behind the hyoid bone. Carotid body tumors are usually of slow growth; are looked upon as benign tumors; and are very difficult of removal on account of their situation at the bifurcation of the common carotid, one of the vessels usually requiring ligating in attempts at removal.

In conclusion, it was pointed out that in all neck tumors a thorough examination of the mouth, pharynx, and larynx was necessary to exclude the possibility of disease in that region, and particular emphasis was laid on the fact that the study of these tumors involved the study of the tumors occurring in the parotid-submaxillary region (parotid or mixed tumors), and it was suggested that these tumors should be called "arch tumors" (1 or 2), because all the tissues are found present which take part in the formation of the arch (cartilage, etc.).

From the many complicated changes occurring in this region it is not difficult to assume that the snaring off of embryonic portions of these arch structures could easily account for the mixed tumors found in this situation.

**Grumme: Theory of Basedow's Disease, Myxœdema, Cretinism, and Mountain Goiter; Hyper- and Hypothyroidism** (Zur Theorie von Morbus Basedowii, Myxœdem, Kretinismus und Gebirgskropf. Hyper- und Hypothyreoidismus). *Berl. klin. Wchnschr.*, 1914, li, 737.

By *Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.*

The author discusses the view of Marimon of Barcelona that there is no such thing as hyperthyroidism but that (1) myxœdema and cretinism are due to defective utilization by the thyroid of the iodine taken in with the food: the organism does not get enough metabolized iodine; and (2) in Basedow's disease the iodine that gets into the blood is not sufficiently metabolized, so that the body is flooded with unmetabolized, that is, injurious, iodine.

The author comes to the conclusion that natural iodine albumen, after it has been changed into a form peculiar to man, serves as a hormone in the internal secretion.

The first cause of myxœdema is a lack of iodine in the nutrition; that of Basedow's disease a functionally weak thyroid gland with sufficient or excessive iodine in the nutrition. From this it follows that in myxœdema there is a lack of the peculiar form of iodine that arises from transformation in the thyroid gland; in Basedow's disease there is an excess of foreign organic iodine.

Grumme draws the following practical conclusions: (1) Cretinism and myxœdema, as well as endemic goiter, are favorably affected by thyroid-iodine; (2) the endemic goiter of mountain regions is also decreased in size by inorganic iodine, but more so by organic iodine albumen preparations; (3) in Basedow's disease any form of iodine is injurious; (4) in apparently simple goiter, which is often a precursor of Basedow's disease, iodine is also harmful.

BIERNATH.

**Chiari, R.: Are All the Heart and Blood-Vessel Symptoms in Basedow's Disease Due to the Disease** (Sind alle bei Morbus Basedow vorhandenen Herz- und Gefässerscheinungen Basedow-Symptome)? *Ztschr. f. angew. Anat. u. Konstitutionsl.*, 1914, i, 280.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

This work tries to clear up the injurious effects on the heart in Basedow's disease. The author calls attention, in the first place, to the fact, which has been proven anatomically, that there is no definite relation between the heart symptoms and the other Basedow symptoms. A myocarditis, which would be expected in severe cases, in analogy with other processes causing heart insufficiency, is rarely found.

The heart symptoms cannot be explained through

the specific effect of the Basedow's disease, but are to be attributed to different functional disturbances, which are generally present before the beginning of the Basedow's disease, but only become manifest after it develops. An important point is that the history of Basedow patients often shows a hereditary taint of rheumatism, scarlet fever, chorea, kidney disease, or congenital hypoplasia of the blood-vessels. Such antecedents serve as a basis on which Basedow's disease may develop. If valvular disease is already present, the Basedow's disease hastens the insufficiency resulting from it. The foundation of the heart symptoms in Basedow's disease is to be attributed to changes in the heart in youth and to a degenerative predisposition—*habitus asthenicus*.

HOTZ.

## SURGERY OF THE CHEST

### CHEST WALL AND BREAST

**Lampe: Castration in Cancer of the Breast** (Kastration bei Mammacarcinom). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 704.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author observed in five cases that carcinoma of the breast was favorably influenced by castration, and the effect was noticeable a few days after the operation. In one case the primary tumor decreased in four weeks to one-third of its original size, and the enlarged axillary glands disappeared completely. This method, suggested by Beatson, has only a palliative value, but used as a preliminary operation before radical amputation of the breast it may improve the result.

RUHEMANN.

**Peuckert: Technique of Extensive Resection of the Thorax in Old Cases of Empyema** (Die Technik ausgedehnter Thoraxresektionen bei veralteten Empyemen). *Beitr. z. klin. Chir.*, 1914, xci, 482.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author recommends the operative treatment of old cavities from empyema in four stages. (1) The first consists in free opening of the thorax at the lower end of the cavity, followed by aseptic tampon and irrigation. (2) In the second the posterior or thoracic wall of the cavity is incised. (3) While in the third the anterior wall is incised. (4) Last, Schede's flaps, the already incised ribs, and the thickened pleura are freed. Gridiron incisions are made in the pleura.

In smaller cavities stages two and three, and sometimes four, can be combined. The author has operated on 10 cases of metapneumonic empyema in this way and one case of tubercular empyema—no deaths resulted. Later examination showed that there were no fistulae and that the general condition was good. Only the tubercular case had a small bronchial fistula with only a slight secretion. Often after the resection of the lower ribs in the

first stage there is free discharge of secretion, fall in temperature, and surprising improvement in the general condition.

NAEGELI.

**Bernard, Léon, and Paraf, J.: The Origin of Pleural Effusions following Pneumothorax in the Tubercular—Natural and Artificial Pneumothorax** (L'origine des épanchements pleuraux consécutifs aux pneumothorax chez les tuberculeux—pneumothorax naturels et pneumothorax artificiels). *Bull. Soc. d'étud. sc. sur la tubercul.*, 1914, iv, 9.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The pleural exudates that frequently follow a spontaneous or artificial pneumothorax are almost all caused by the tubercle bacillus and not by a secondary infection. They are generally serous at first, gradually become turbid, and if they last long enough, finally, purulent. Independently of the character of the exudate, bacilli are often found in it in such great quantities that they can be found in a simple smear, and often in such small numbers that they can only be demonstrated by inoculation in animals. The course and character of the pleuritis are not influenced by these differences. In the exudate, after spontaneous pneumothorax, there are generally many tubercle bacilli; after artificial pneumothorax only a few.

The authors concluded that this difference was due to the fact that spontaneous pneumothorax is generally an open or valve pneumothorax, while the artificial pneumothorax is closed, and they tried to find whether there was a constant relation between the kind of pneumothorax and the number of bacilli in the exudate. They tried to determine the kind of pneumothorax *in vivo* by intrapleural measurement of pressure with Kuss' insufflation apparatus, and by the injection of an aqueous solution of methylene blue into the pleural cavity.

In open pneumothorax the pressure is the same as, or lower than, the atmospheric pressure and the excretion blue; in valve pneumothorax the pressure



is higher than the atmospheric and the excretion uncolored; in closed pneumothorax the intrapleural pressure is negative, but rises on insufflation of gas, and the excretion is not colored blue. The reliability of this method of examination has been confirmed many times on autopsy. The bacteriological examination of the pleural exudate at the same time showed that, in fact, in open and valve pneumothorax there were always large numbers of a bacilli, while in closed pneumothorax it was almost free of bacilli.

The purely tubercular nature of pleural effusions after pneumothorax makes it probable that with the beginning of the latter there is frequently an irruption of greater or smaller numbers of bacilli into the pleural cavity. In open and valve pneumothorax this may come about from the fact that the tubercular patient coughs into his pleural cavities to a certain extent through his pleuropulmonary fistulae. This is generally the case in spontaneous pneumothorax.

In artificial pneumothorax the breaking down of adhesions opens the way to the pleural cavity for the bacilli. If a fibrous pachypleuritis with a few small tubercles was the cause of the adhesions, when they are broken down only a few foci of bacilli are set free, and a little exudate, free of bacilli, enters; the pneumothorax remains closed. But if there was extensive caseous pleuritis, with the breaking down of the adhesions a pleuropulmonary fistula might easily arise, the pneumothorax become open, and an abundant irruption of bacilli take place. Operative injuries of the lung in the insufflation of gas are more rarely the cause of lung fistulae and the entrance of many bacilli.

In the discussion RIST and RÉNON confirmed the essential points of the authors. HARRASS.

**Lyon, J. A.: Therapeutic Artificial Pneumothorax as Associate Treatment of Pulmonary Tuberculosis; a Preliminary Report of Sixty-Two Cases.** *Boston M. & S. J.*, 1914, clxxi, 329.

By Surg., Gynec. & Obst.

With few exceptions all of the cases reported were bilateral. It has been the author's rule to refrain from at once establishing a complete collapse of one lung when the disease extends beyond the apex in the opposite lung. The greatest value of artificial pneumothorax lies in relieving the cough, the amount of expectoration, and the toxæmia, by restricting the mobility of the more extensively diseased lung. Later, if conditions are favorable, a complete pneumothorax may be established. In several cases, following this treatment, all physical signs of active disease have disappeared in the apex of the untreated lung. This change is credited to the diminishing of the cough, expectoration, and toxæmia.

The failures are recorded under three headings: (1) unilateral cases with extensive pleural adhesions; (2) cases in which an active process in both lungs has extended beyond the apices; and (3) cases which

were rapidly reaching the terminal stage. On account of the simplicity of the method, the Forlanini operation was used. The technique is given in detail.

Pleural shock, cardiac dilation, infection, spontaneous pneumothorax, air embolism, pulmonary hæmorrhage, and recrudescence in the untreated lung are the chief dangers accompanying induced pneumothorax.

Of the 62 cases treated, 2 were incipient and treatment was given to relieve frequent hæmoptysis. The lungs in both instances have remained collapsed and there has been no return of the hæmoptysis. There were 31 cases in the moderately advanced stage of the disease: 2 in which the prognosis was questionable, 17 unfavorable, and 12 bad. In three instances the lung was collapsed to relieve hæmorrhage and the experiment was successful. The treatment had to be discontinued with two of the patients on account of a recrudescence of the disease in the opposite lung. One developed a severe hæmoptysis in the uncollapsed side and the treatment had to be abandoned. Four had to be discontinued on account of a recrudescence in the opposite lung, in one on account of neurosis, in 3 because a sufficient amount of gas could not be introduced to insure results. In two instances the treatment was abandoned on account of the occurrence of pleural shock, as the patients became unconscious. The treatment was discontinued in still another case which developed appendicitis. One patient died following a spontaneous pneumothorax, and the treatment was discontinued in another case on account of adhesions at the base of the opposite lung, causing marked dyspnoea.

Of the 15 remaining patients, 5 have been discharged and are doing well; 3 of this number are at present employed. The treatment is being continued satisfactorily in the remaining 10 cases, many of whom will soon be discharged.

The greatest number of injections made in a given case was 28; the maximum amount given was 1700 ccm. and the minimum amount was 50 ccm., with the exception of the patients suffering from pleural shock to whom none was given. In the 29 far advanced cases the prognosis was unfavorable in 10, and bad in 19. The treatment was discontinued in 8 instances on account of recrudescence in the untreated side, 4 on account of neurosis, 10 on account of dense unyielding pleural adhesions. One died of acute cardiac dilation and pulmonary oedema. Of the 6 remaining patients, one has been discharged as arrested and is working; 3 are progressing satisfactorily; the treatment was discontinued in another instance on account of pregnancy; and the one case remaining is a spontaneous pneumothorax, the collapsed lung being maintained by occasional introductions of gas.

When the results of the treatment are analyzed, it must be understood that in almost every instance the prognosis was not encouraging and was, in most instances, exceedingly bad. Of the 62 cases treated,

58 were bilateral and 4 were unilateral. The treatment was discontinued in 13 cases on account of dense unyielding pleural adhesions, and in 12 on account of recrudescence of the disease in the untreated side.

EDWARD L. CORNELL.

**Uffreduzzi, O.: Surgical Treatment of Pulmonary Tuberculosis.** *Internat. J. Surg.*, 1914, xxvii, 275. By Surg., Gynec. & Obst.

Among the recent methods of surgical treatment of tuberculosis of the lung has been the resection of the first rib by Freund, who believes that compression of the lung apex causes a poor blood supply. Shrinkage of the diseased lung has also been tried by ligating branches of the pulmonary artery. Next pneumothorax was advocated by Forlanini; this was limited in application to unilateral tuberculosis and a chest free from adhesions. When adhesions are present, Friedrich, Bauer, and Schede have resorted to thoracoplastica extrapleurica. If the lower lobe is involved, phrenectomy in the neck has been done.

The author has killed animals four months after phrenectomy had been done and found the lung perfectly aerated throughout; no changes had occurred. Sauerbruch has performed it on a few cases with favorable results.

Pneumothorax is the best surgical treatment, next to which comes thoracoplastica extrapleurica as done by Wilms. Phrenectomy is a relatively simple operation and may be used in tuberculosis of the lower lung in conjunction with thoracoplasty.

EUGENE CARY.

## TRACHEA AND LUNGS

**Good, R. H.: Removal of Two Nails from Bronchi of Child Two Years Old.** *N. Y. M. J.*, 1914, c, 364. By Surg., Gynec. & Obst.

This case was seen early, an X-ray taken shortly after the accident, disclosing two nails, heads down, one in either bronchus. The child became very cyanotic at times, because the heads of the nails closed the lumen of the bronchi.

Bruening's smallest bronchoscopic tube was used, and the nails were removed by grasping them with forceps—the tube, forceps, and nail being removed at the same time, as the diameter of the heads of the nails was greater than that of the tube. The patient was kept in a steam-tent for two days and the throat occasionally sprayed with adrenalin and cocaine. At the end of 36 hours a slight oedema of the glottis developed, but soon subsided.

The author emphasizes the importance of immediately taking X-ray pictures in these cases and of the use of short exposures—one-tenth to one-fifth of a second. Foreign bodies should always be removed as soon as possible. Tracheotomy is not advisable, as it greatly increases the mortality and is not necessary.

EUGENE CARY.

**Henschen, K.: Experiments in Intrathoracic Surgery of the Lung** (Experimente zur intrathorakalen Lungenchirurgie). *Beitr. z. klin. Chir.*, 1914, xc, 373. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author performed the following experimental operations:

1. The bringing of the lower lobe under the diaphragm in order to attain as great contraction as possible from compression.
2. Enveloping a lobe of the lung in a purse-like covering of transplanted fascia to produce lobar compression of only one lobe.
3. The use of a flap of fascia to hermetically close the bronchial stump in extirpation of a lobe of the lung. It is well known that extirpation of a lobe of lung often fails because this stump is not perfectly taken care of and mediastinitis results; the care of the bronchial stump is a technical problem that has not yet been solved.
4. Strengthening Tiegel's peribronchial suture of the bronchus after rupture of the bronchus or bronchotomy by placing a strip of fascia around it, as well as permanent ligature of a bronchus with a strip of fascia or tendon.
5. The placing of the lower lobe under a flap of fascia fastened to the diaphragm to attain intense compression of the lung.
6. The artificial raising of the diaphragm to support the lung in compression.
7. Compression of the lung from above and below by the insertion of two flaps of fascia.

Among these numerous new methods the author is only ready to report on the first. The experiments, which were made on dogs, showed that the artificial displacement of the right as well as the left lobes of the lung under the diaphragm caused intense compression of the lung; the lung, compressed between the diaphragm and the liver, showed a marked degree of compression atelectasis. All of the animals except one, which died of pleurisy from the operation, survived.

The author proposes that this should be used as an early operation in bronchiectasis of the lower lobe in human beings. It leads to a degree of compression of the organ that cannot be attained by any other operation.

ADLER.

## HEART AND VASCULAR SYSTEM

**Carrel, A., and Tuffier, T.: Pathological and Experimental Study of Surgery of the Orifices of the Heart** (Étude anatomopathologique et expérimentale sur la chirurgie des orifices du cœur). *Presse méd.*, 1914, xxii, 173.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In operating for heart disease the kind of valve lesion is important, as well as the condition of the heart and blood-vessels. According to the authors' research, mitral stenoses, some aortic stenoses, and some pulmonary stenoses may be operated on.

The dangers of operation consist in injuries to the



coronary arteries, hæmorrhage, entrance of air into the heart and vessels, and in the formation of thrombi. The coronary veins can be ligated without danger, but ligation of the arteries is well borne only in the peripheral segment. The severity of the hæmorrhage depends on the size and direction of the wound. Hæmorrhages from the right auricle are the hardest to control. The entrance of air into the left ventricle is a very grave accident, as is also the formation of thrombi. The so-called dangerous zone in the heart muscle includes the coronary arteries from their mouth to the first bifurcation and the septum between the two auricles. An incision in the region of the boundary between the auricle and ventricle causes immediate cessation of heart action, as Haecker and Schepelmann have shown. Also at the boundary of the upper and middle thirds of the anterior longitudinal groove there is a point, the mechanical irritation of which immediately stops the heart.

Among the methods for temporary hæmostasis the authors believe the one best borne is compression of the superior and inferior vena cavæ, as recommended by Haecker. Internal and external valvulotomy is practiced in the treatment of stenosis; the former is accomplished by making an incision with a suitable instrument, either near the contracted place or at a distance from it. Another method of treating stenosis is to form an anastomosis between two points above and below the contracted place. An intercostal incision is recommended as the best mode of approach to the heart. Several case histories conclude the work.

HAECKER.

### PHARYNX AND ŒSOPHAGUS

**Syring: Clinical and Experimental Study of Plastic Operation on the Œsophagus** (Klinisches und Experimentelles zur Œsophagoplastik). *Deutsche Ztschr. f. Chir.*, 1914, cxxviii, 260.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author reports the case of a 22-year-old girl, on whom a plastic operation was performed on the Œsophagus for stricture, following corrosion with silver nitrate solution. A loop of jejunum was used, beginning about 35 cm. below the jejuno-duodenal fold; about 20 cm. of the jejunum was freed of its mesentery, resected transversely at the lower end, drawn up through a slit in the mesocolon, and the upper opening sutured into the skin of the thorax, so that the motion was, of course, antiperistaltic. The Œsophagus was connected with the stomach by anastomosis, and then a lateral anastomosis made between the transplanted loop and the distal end of the jejunum which had been closed. The transplanted loop was narrowed by the torsion of silk sutures around it. The loop, which opened at the level of the nipples, remained well nourished, but the upward peristalsis soon proved disastrous. Food given through a Witzel fistula, that had been established before the operation, was rejected a short time after being given through the upper open-

ing; it was sometimes mixed with bile and amounted to as much as 1,950 ccm. daily. An attempt was made to prevent this, first by sectioning the transplanted loop between the anastomosis, in order to prevent regurgitation from the duodenum, and later by separating the mesentery, still attached to the loop, in order to cut off nervous influence. These attempts were unsuccessful and the patient died of pulmonary tuberculosis which had developed meanwhile.

The previously published case reports have held that peristalsis in the transplanted loop was of no significance. In Roux's method the loop is placed in such a position that peristalsis takes place in the normal direction, but in this case it was so much more convenient that the antiperistaltic direction was deliberately chosen, because it had always been reported that the direction of peristalsis made no difference, and that peristalsis gradually stopped. The preceding case shows that this idea is misleading and dangerous. Syring believes that this case shows that the autonomous system of ganglia in the intestinal wall determines the intestinal movements. He thinks also that in his patient perhaps the increased vagotonus influenced the course of the condition, and that the results of this method would not have been so bad in a patient without vagotonus.

He then takes up the discussion of the published cases that are not in accord with his results. His case caused him to take up experimentally in dogs the method proposed by Jianu of forming a tube from the greater curvature of the stomach, because he thought that there must be the same disadvantages in this, because of the antiperistaltic movement of the new tube. Five of the seven dogs died before the sixth day, so that it was only possible to observe the effects of the Jianu operation for a longer time than that in two cases. In these there was absolute insufficiency of the gastrostomy, to such an extent that one dog, whose history is given, though it ate greedily, died from malnutrition after about 6 weeks. Actual peristaltic movements were not observed in the discharge of the food from the tube, but Syring thinks that peristalsis probably played a part in it. For this reason he believes that Jianu's method, although it is technically easy to perform, and gives good conditions with relation to the nutrition of the tube, is not without danger; at any rate, Meyer's suggestion should be carried out to scarify the serous coat at the point of entrance into the stomach, so as to cut off the nerve conduction to the tube as much as possible; and also by torsion of the tube according to Gevsuny's method, the communication between the tube and the stomach should be made as small as possible so as to make the passage of stomach contents into the tube difficult. He also recommends atropin and papaverine to decrease vagotonus. Because of the antiperistaltic motion he also rejects von Fink's suggestion to separate the stomach in front of the pylorus, and transplant it to form an Œsophagus. ELLERMANN.

## SURGERY OF THE ABDOMEN

## ABDOMINAL WALL AND PERITONEUM

**Druner: The Arched Epigastric Incision** (Der bogenförmige Bauchschnitt im Epigastrium). *Zentralbl. f. Chir.*, 1914, xli, 841.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In order to spare the nerves, fascia, and muscles the author recommends the lateral, pararectal oblique incision in the lower part of the abdomen, and in the region of the epigastrium an arched incision opening downward. Both incisions are described in detail, and are considered better than the ones heretofore in use. The former is made near the sheath of the rectus, separating the aponeuroses in the direction of their fibers. In the other the skin, fatty tissue, and external sheath of the rectus are cut in an arch shape; then the rectus is drawn to one side and the posterior sheath of the rectus and peritoneum opened, or, if more space is needed, the rectus itself is incised on one or both sides. The author has always had excellent results with this incision.

KNOKE.

**Guibé, M.: Adenomata of the Umbilicus** (Les adénomes de l'ombilic). *Rev. de gynéc. et de chir. abdom.*, 1914, xxii, 279.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

All known cases except one were in women. There is no connection between adenoma of the umbilicus and pregnancy. The adenomata are from the size of a hazel nut to that of an orange, and may be sessile or peduncled. There is no sharp boundary between the tumors and the neighboring tissue. They consist of firm connective tissue containing muscle fibers, and of tubular glands, sometimes branching and sometimes showing cystic degeneration, embedded in cytogenous stroma. The epithelium in the non-dilated glands is cylindrical and ciliated; in the distended ones it varies from the cubical to the pavement type. The glands are filled with a brownish-black substance; in the connective tissue there is abundant hæmorrhage and pigmentation.

The symptoms consist of pain, which increases at the menstruation time; there may also be hæmorrhage from the tumor at that time and a rapid increase in the size of the tumor; otherwise the growth of these tumors is very slow. Some authors have held that they originate from sweat-glands, some from remnants of the omphalomesenteric duct, and some from aberrant parts of Müller's duct. The author thinks that these theories are improbable, and believes these adenomata have the same origin as the retro-uterine adenomyositis of Meyers—that is, metaplasia of the peritoneal endothelium. As to the cilia, he cites a case of Firket's of multiple cysts of the peritoneum and omentum which had ciliated epithelium; he also recalls the fact that the peritoneal epithelium in certain animals has cilia.

The tumors are to be regarded, therefore, as pseudo-tumors.

ALBRECHT.

**Hoessli, H.: Leucocytosis in Intraperitoneal Hæmorrhage** (Leukocytose bei Intraperitonealblutungen). *Mitt. a. d. Grenzgeb. d. Med. u. Chir.*, 1914, xxvii, 630.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A short review is given of the literature on leucocytosis in intraperitoneal hæmorrhage. The author describes four of his own cases of hyperleucocytosis in intraperitoneal hæmorrhage resulting from tubal abortion or ovarian apoplexy. He experimented on rabbits to determine under what conditions hyperleucocytosis is to be expected in hæmorrhage. The result showed that the withdrawal of blood alone did not cause an increase in the white blood-cells; but when the blood taken from an animal was injected into its own abdominal cavity, or into another of the same species, there was a marked hyperleucocytosis which reached its maximum about six hours after the injection. If the blood was injected subcutaneously into another animal of the same species, the leucocyte curve did not rise; but it did if the blood of the same animal was used. The curve reached its maximum height in this case in about 24 hours.

The experiments showed that the leucocyte count cannot be used for the differential diagnosis of intra-abdominal hæmorrhage and inflammatory processes; but if there are no marked signs of infection, hyperleucocytosis may be regarded as a sign of intraperitoneal hæmorrhage.

BRENTANO.

**Noetzel: The Use of Brenner's Principle in the Radical Operation for Inguinal Hernia** (Über Verwendung des Brennerschen Prinzips bei der Radikaloperation der Leistenhernien). *Deutsche Gesellschaft. f. Chir.*, 1914.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In Brenner's typical suture, suture of the internal oblique to the cremaster, unsafe places remain externally where the cremaster fibers originate from Poupart's ligament, and also on the internal inferior angle, where the whole cremaster with the spermatic cord passes through the narrowed external inguinal ring. In order to make this suture firmer, the cremaster is separated at its lower end. The free lower end is sutured into the inner lower angle of the hernial opening, the lateral free edge of the cremaster being fixed with a few sutures to Poupart's ligament, the median edge to the internal oblique. The muscle, which is quite powerfully developed in large hernias, may thus serve to bridge over very broad gaps, and a deep firm layer is formed without traction on the sutured parts, especially without any tension or separation of fibers on Poupart's ligament.

If the internal oblique is very high and there are



very great gaps, the cremaster does not always suffice to cover them. In these cases the insertion of the internal oblique into the rectus is to be cut with a piece of its aponeurosis and drawn downward, where it is fastened at the internal angle, so that the normal course of the muscle inward and downward is restored. After this the suture to the cremaster, as described, is carried out. In this way very large gaps can be bridged over and a firm posterior wall established without any tension.

Brenner, who originated this method, has used it in about 4,500 cases and in a large number of cases examined afterward he found only 5 per cent of recurrences.

KATZENSTEIN.

**MacLennan, A.: The Simplified Operation for the Cure of Hernia in Infants.** *Clin. J.*, 1914, xliii, 449.

By Surg., Gynec. & Obst.

The operation which the author performs is said to be so simple that the dangers associated with the radical operation for hernia in infants have vanished. The selection of the case has become less exclusive and the preliminary treatment, other than preparation for operation, abandoned; the dressing has been reduced almost to the vanishing point, while the after-treatment is *nil*.

In the preparation of a case, phimosis, if present, is corrected one month before the proposed radical operation. In exceptional circumstances, the circumcision and the hernia may be operated at the same sitting. No change should be made in the diet, nor should the bowels be interfered with. The groin is washed with soap and water, followed by alcohol. The hips of the infant are well raised on a sand pillow. This is important, as the operation is much facilitated by rendering prominent the parts under view.

The operation is as follows: An incision, three-quarters of an inch in length, is made through the skin so that its center is over the internal ring. Two blunt retractors are inserted into the wound and used to force apart the deeper tissues. By this means the fascia of the external oblique muscle is torn through and, by moving the retractors to and fro, the bluish, more glistening cord and sac become apparent. Where obscurity exists, it will more likely be due to false position of the incision or incomplete severance of the subcutaneous tissue. The sac and cord are picked up and drawn out of the wound, and the sac is rapidly dissected free from all attachments. The testicles should not be removed unless absolutely necessary. If the sac is a true congenital one, it must be divided so as to permit a covering for the testicle.

The sac should be freed from all adhesions until the junction with the peritoneum has been reached and then treated as in Macewen's operation. If long, it should not all be returned into the abdomen; the requisite amount should be ligatured by puncturing at the desired spot and making a single knot round one-half; the ends are then carried round the

other half and double-knotted. The upper portion of the sac is cut off. Having threaded the sac, a pair of broad, straight scissors are passed up the canal between the parietes and the sac to act as a guide for the sac-puckering suture; the needle holding the suture is passed up the canal, eye first, beyond the internal ring, and when the scissors have been withdrawn and the upper angle of the wound pulled upward by a pair of dissecting forceps, the needle, with the suture, is made to perforate the abdominal wall. When this suture is pulled upon, the sac retreats up the canal. The suture is fixed to the fascia of the external oblique muscle by a single hitch. This anchors the crumpled-up sac at the internal ring where it acts as a sentinel guarding the canal. The sac suture is used for the closure of the wound.

The dressing used is a small roll of gauze, which little more than covers the wound. It is retained in position by a strip of rubber adhesive tape two by three inches in size. The after-treatment consists in leaving the infant alone and feeding him properly.

The article is accompanied by many illustrations showing in detail the method of operation.

EDWARD L. CORNELL.

#### GASTRO-INTESTINAL TRACT

**Brown, Jr., A. G.: Diagnosis of Certain Stomach Cases.** *South. M. J.*, 1914, vii, 617.

By Surg., Gynec. & Obst.

The author shows how certain diseased conditions outside the stomach may express themselves through stomach symptoms. He gives eleven different conditions and illustrates each with a case report.

The intimate and complicated connection between the stomach and other organs through being surrounded and connected with other digestive organs; being supplied by a large number of blood-vessels; being intimately associated with adjacent organs; and being connected by nerves with remote parts of the body, makes it a prominent agent of expression in disease.

Inasmuch as the motor, secretory, and sensory action of the stomach is controlled by the pneumogastric and splanchnic nerves, any derangements of their connections will usually affect these functions of the stomach.

Conditions outside the stomach which often express themselves through the stomach are:

1. Certain non-bacterial toxic disturbances, such as diabetes, gout, and nephritis; also certain bacterial infections — as the infectious fevers, tuberculosis, and acute endocarditis.

2. Certain irritations of the cerebrum — as tumors, abscesses, hæmorrhages, embolisms, and emotional states.

3. From the pharynx, larynx, and lungs — as in whooping cough, tuberculosis, aneurism, and goiter.

4. The stomach itself — as in gastritis, dilatation, pyloric stenosis, ulcer, and cancer.

5. From the liver and gall-bladder — as in cholecystitis, hepatitis, and hepatic colic.

6. From the kidneys — as in nephritis, pyelitis, renal colic, and floating kidneys.

7. From the pancreas — as in pancreatitis and cancer of the organ.

8. From the uterus and appendages — as in pregnancy, misplacements, inflammations, and stenosis of the cervix.

9. From the bladder and prostate — as in cystitis and prostatitis, etc.

10. From acute infections of the peritoneum.

11. From the intestines — as in duodenal ulcer, appendicitis, parasites, obstructions, hernias, etc.

In closing, the author emphasizes the study of the intestinal discharges in all stomach cases.

PHILLIPS M. CHASE.

**Axford, W. H.: A Röntgenological Study of the Alimentary Canal.** *J. M. Soc. N. J.*, 1914, xi, 334. By Surg., Gynec. & Obst.

Axford's paper is devoted chiefly to the effects of gravity and ptosis in the production of angulation, kinks, evolutionary bands, adhesions, and secondary inflammatory processes, resulting in stasis and obstruction. He compares the intestine to coils of rubber tubing suspended on a row of nails. In certain parts of the intestines, viz., the so-called normal suspension points, such as the junction of the first and second portions of the duodenum, the duodenojejunal junction, terminal ileum, hepatic and splenic flexures, the writer almost invariably finds angulation and marked changes in the lumen of the bowel. There may result simple mechanical obstruction, mechanical obstruction combined with organic changes, and organic changes without mechanical obstruction. He thinks that heredity plays an important part in many cases and has found contracted mesentery, evolutionary bands, and adhesions in babies suffering from digestive disturbances long before they were able to walk. Healthy babies may develop these troubles after beginning to walk. The appendix can be studied in 90 per cent of the cases. A non-functioning, fixed, kinked, or clubbed appendix is usually pathologic.

He summarizes the symptoms of stasis according to Lane, quotes Bainbridge with approval, praises the X-ray as a means of accurate localization of the trouble, and touches upon the question of treatment, both dietetic and surgical.

ALBERT MILLER.

**Peiser: Post-Operative Paralysis of the Stomach and Intestines** (Über postoperative Magen- und Darmlähmungen). *Berl. klin. Wchnschr.*, 1914, li, 996.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In post-operative paralysis of the gastro-intestinal tract, the author distinguishes paralysis of the stomach, paralysis of the stomach and intestines, and paralysis of the intestines. Post-operative paralysis of the stomach is much more frequent than is supposed. Nausea and vomiting are beginning stages of paralysis of the stomach, and are observed very frequently. Severe paralysis of the stomach,

with copious, gushing vomiting, is much rarer; it is also accompanied by marked dilatation of the stomach, profuse secretion of the mucous membrane of the stomach, with or without arteriomesenteric occlusion of the duodenum. Prophylactically, in patients with stomach disease and in neurasthenics, overfilling of the stomach should be avoided after operation; also too early feeding by the mouth. This is the more important because patients so disposed often complain of thirst.

There is another form of post-operative paralysis of the stomach, without profuse secretion and without occlusion of the duodenum, but generally in conjunction with paralysis of the intestine. It disappears under the picture of post-operative paralytic ileus, all the attention being directed to the intestinal paralysis, so that the condition of the stomach is not observed. Therapeutically, the author has not had certain results from the use of physostigmine, peristaltin, sennatin, etc., in post-operative paralysis of the intestines; but in severe cases he has had good results from hormonal. Heat applied to the abdomen after operation is to be recommended, but not in purulent peritonitis, and not in the form of hot-air cabinets, because the high temperature affects the heart too much and the method is not without danger for patients recently operated upon. Cushions heated by electricity are better, as they have a good effect on the deep tissues but do not influence the general condition.

RUNGE.

**Eusterman, G. B.: Chronic Gastric Disturbances; Differential Diagnosis.** *J. Lancet*, 1914, xxxiv, 460. By Surg., Gynec. & Obst.

All forms of chronic dyspepsia may be broadly classified into three groups: (1) functional, (2) reflex, and (3) organic. The author chiefly discusses the chronic recurrent and painful or distressing types due to some lesion of the stomach and duodenum or of contiguous organs associated with the digestive apparatus. Chronic simple ulcers of the stomach and duodenum, especially the latter, have a fairly definite symptomatology in 75 to 85 per cent of cases. Chronicity, periodicity of attacks alternating with symptomless intervals, or remissions, and hypersecretion are characteristic. Pain is noted in 95 per cent of all cases. Onset of pain and associated symptoms have a fairly definite relation to food intake. Food gives relief in 76 per cent. Hemorrhage, perforation, or pyloric stenosis obtains in approximately 30 per cent of all cases. Localized tenderness is of secondary diagnostic importance unless perforative tendencies involving the peritoneum are present. Analyses of feces and gastric contents are valuable if confirmatory of the clinical findings. The röntgen-ray and other laboratory data are indispensable in atypical, irregular, or mixed cases.

Clinical differentiation between gastric and duodenal lesions is often difficult; in the former, the attacks are not as clear-cut as in the duodenal and pyloric types. In ulcers well above the pylorus, the symptoms may be present for longer periods, or



there may be remissions rather than intermissions. Small amounts of food give relief, while increased amounts may provoke pain or distress. Soda relieves when food does not. Pain appearing in one-half to one hour after meals is quite diagnostic of gastric lesions. Radiation and diffuseness of pain is considerably more extensive in the gastric than in the duodenal types; vomiting and hæmatemesis rather more common; exacerbations more frequent, perhaps briefer in duration and more easily provoked by external influences. Location and radiation of pain to the left, lessened motility, and spasm suggest peptic ulcer. Acid values are about 20 per cent less in gastric than in duodenal types. Reflex gastric disturbances, the result of gall-bladder or appendiceal disease, must be suspected and excluded when symptoms are irregular during the period of attack. Coincident disease in these organs and the stomach or duodenum occurs in 20 per cent of all ulcer cases.

Mistaken diagnoses may be made in (1) perforating duodenal ulcers, the painful seizures mistaken for cholelithiasis in 10 per cent of all cases; (2) chronic gall-bladder disease, with or without stones, absence of typical colic or icterus, but periods of marked gastric disturbances (pain, flatulency, nausea, sour and bitter regurgitation) are occasionally mistaken for duodenal or gastric ulcer. Röntgen-ray findings are of the greatest value in (1) cancerous lesions and hour-glass deformities, and (2) in gastric ulcer. There are radiologic limitations in duodenal ulcers, but proper correlation of clinical, laboratory, and röntgen-ray data enables a safe diagnostic conclusion to be made in most cases. Gastric cancer follows clinically and histopathologically upon ulcer in 60 per cent of all cases; palpable mass is present in 50 per cent. In 48 per cent of all cancers, free HCl was present, although in reduced amount. Ninety-five per cent of all gastric tumors (masses) are malignant. Many extraneous conditions cause gastric disturbances, chief among which are local or central nervous syphilis, cardiospasm, Pott's disease, pancreatitis, chronic nephritis, migraine, myocardial insufficiency, and hepatic disease.

**Kocher, T.: A Case of Volvulus of the Stomach**  
(Ein Fall von Magenvolvulus). *Deutsche Ztschr. f. Chir.*, 1914, cxxvii, 591.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Kocher gives a detailed description and history of a case of volvulus of the stomach. The 53-year-old patient had suffered from "stomach cramps" 33, 21, and 13 years before, each of the last two attacks lasting 3 months. A fourth attack began in the spring of 1913, and still persisted when the patient was admitted to the hospital in November, 1913.

A diagnosis was made of ulcer of the stomach or duodenum. The attacks of pain indicated this as well as the chemical examination of the stomach contents. The most cutting pains in the abdomen began suddenly on November fifteenth, and an enormous rigid "loop of intestine" was observed. Two and one-half hours after the beginning of

threatening symptoms operation was performed, with the diagnosis of volvulus of the sigmoid flexure. On opening the abdomen the enormously distended stomach was seen in a vertical position, and to the left, also lying vertically, the transverse colon. The greater curvature lay to the left; the great distention of the stomach was chiefly caused by stretching of the anterior wall. The stomach was twisted 270 degrees. It was untwisted and the findings were as follows: (1) Extreme ptosis, to the syphysis; (2) the duodenum ran upward and to the left, so that the horizontal part stood almost vertically because of the traction of the stomach on it; (3) there was an hour-glass stomach with a small cardiac sac; (4) the loops of small intestine of the right side were displaced to the left over the pedicle of the volvulus.

Because of severe symptoms of insufficiency of the larger sac of the stomach an inferior gastro-enterostomy had to be performed five weeks later. On this operation the stretching of the anterior wall of the stomach was explained. As a result of the ulcer which had caused the hour-glass stomach (and of congenital predisposition?), contraction of the posterior wall had taken place, which had brought the greater curvature very close to the smaller curvature. In the second operation the marked hypertrophy of the stomach musculature caused a great deal of difficulty, as the mucous membrane could hardly be brought together over it; the defective elasticity of the opening caused renewed symptoms of retention, so that nine days later Heinecke-Mikulicz' plastic operation had to be performed. After that the condition of the patient was satisfactory.

Twenty-eight cases of pure volvulus of the stomach are known: 18 of them were operated on, and 7 of them showed hour-glass stomachs. This condition is an important factor in etiology. Factors in the causation of the volvulus are over-filling and ptosis of the stomach; in this way the duodenum and pylorus are mobilized and displaced, the stomach becomes very movable and the lesser omentum is stretched. If there is hour-glass stomach, the already contracted place becomes still narrower: the duodenum, lesser omentum, and the small pouch of the stomach form the pedicle. Another factor is the contraction of the posterior wall of the stomach. The immediate cause of the development of the volvulus is (1) increased peristalsis after antiperistalsis; (2) vomiting; and (3) mechanical torsion after movements of the body, because of the weight of the distended and prolapsed stomach, trauma of the abdomen, and, in complicated cases, tumors. Kocher distinguishes two types: (a) transverse volvulus around the mesenteric axis, and (b) volvulus around the long axis of the stomach itself, this being the more unusual form. In diagnosis, if volvulus of the stomach is thought of, one must, as in all cases of ileus, exclude perforative peritonitis. Acute pancreatitis must also be considered. A stomach condition is indicated by the



sudden extreme meteorism, the appearance of a large, circumscribed tympanitic tumor in the stomach region, and a change in the level of the fluid with a change in position. Among the 28 cases mentioned above with 18 operations there was recovery in 13 cases. Several instructive sketches and photographs are given.

EUGEN SCHULTZE.

**De Quervain, F.: The Diagnosis of Gastric and Duodenal Ulcer.** *Ann. Surg., Phila.*, 1914, lx, 252. By Surg., Gynec. & Obst.

The extent to which surgical operations for gastric ulcers may be successfully performed depends chiefly upon the physician's ability to diagnose. In the last decade, progress has been made principally in the realm of extrapyloric gastric ulcer and ulcers of the duodenum; i. e., cases which, unless accidental bleeding or acute perforation set in, have heretofore been regarded as "gastralgiæ" and "gastric neuroses" and treated in various bath and nerve sanatoriums. In spite of the fact that an occasional ulcer had been surgically treated before the introduction of the röntgen rays, nevertheless a definite and systematic plan of procedure could only become a genuine possibility after their introduction, submitting as it did the benefits of clear vision for uncertain conjectures and theoretical deductions. Progress, thus made, has manifested itself not only by the ever-increasing number of operations for gastric and duodenal ulcers actually performed, but also by the great number of published articles.

Other benefits derived by X-ray examinations even surpass the advantages naturally obtained through diagnosis made *ante operationem*. The X-ray enables the physician, in a manner heretofore impossible, to discover the causes of immediate post-operative disturbances and the subsequent ill effects thereof; and, furthermore, to exercise a certain self-criticism formerly too often supplied by the internist, which, though sometimes just, was too frequently lacking in any sure foundation.

The author lays great stress on the taking of a series of radiograms, thus fixing the most important phases of the process of digestion. Immediately after the patient has taken 400 grams of a sufficiently liquid carbohydrate-contrast meal — without milk — photographs are made — one in the upright position, one in the abdominal position, and one in the right lateral position. Two and six hours later photographs are taken in the abdominal position — less frequently in the upright position. Photographs are again taken after 24, 48 hours, and so on, until the bowels are emptied of the contrast substances. These latter sittings are always taken if after 6 hours there is still a considerable residue in the stomach and, also, if a disease of the bowels is in question. The double meal recommended by Haudek is not used.

In non-stenosed and non-perforating gastric ulcers a localized spasm of the gastric wall is found at the site of the ulcers. This localized spasm differs from the sometimes very intense contractions attending

peristaltic waves, as a rule, in that it constricts the stomach only along the greater curvature. The chief reason for this may be that the ulcers are mostly situated at the lesser curvature. A further diagnostic sign is, that in ulcer the spasm is always found at the same place, while at different examinations the contraction of the peristaltic waves is found at different places even if it should concern the greater curvature more than the lesser.

The spasm is not a lasting one. If the stomach is empty it is absent; if material is introduced (even air) the spasm reappears, but can be dissipated more or less by the use of atropine or papaverine.

When there are no ulcers the spasm may occur at the base of a cicatrix after operation, or as the result of other anatomical anomalies, such as cicatricial bands or the pressure of corsets (seldom). These spasms rarely interfere with the diagnosis.

The spastic condition is not found in all gastric ulcers. The author has seen many cases of pronounced gastric ulcers in which the spasm under ordinary conditions of its appearance was wanting or scarcely to be observed.

The non-stenosed and non-penetrating pyloric ulcer is considered under this heading also. The retention of a considerable residue after six hours is of diagnostic value. The following purely functional disturbances may simulate pyloric ulcer.

1. In purely functional diminished mobility, especially in connection with ptosis. In these cases the stomach shows a diminished peristalsis.

2. In pylorospasm excited by an ulcer remote from the pylorus. In penetrating ulcers at the lesser curvature, sometimes there is found considerable retardation in the removal of food from the gastric section situated beyond the ulcer. This delay is due to a reflex pylorospasm.

3. In the so-called duodenal motility; i. e., the initially accelerated, and subsequently abnormally retarded, voiding of the stomach, a diminished 2-hour residue and an abnormal 6-hour residue is found; whereas in pure pylorospasm the stomach also holds an abnormally large content after two hours. The distinction of both conditions is easily made by an investigation after two hours.

4. In toxic pylorospasm (morphine, nicotine, etc.) as a part of the phenomenon of the gastrospasm recently described by Holzknecht and Lueger in its radiologic point of view.

5. In hyperacidity without ulcer.

An apparent 6-hour residue with preserved or even increased peristalsis gives an essential indication but no real proof of the existence of a pyloric ulcer.

The author describes the non-stenosed, penetrating, gastric ulcer and gives the three possibilities for its formation:

1. The ulcer may be situated exactly at the lesser curvature — very seldom at the greater — and gradually corrodes through all layers to the point of attachment of the gastrohepatic ligament. Through proliferation and thickening of its connective tissue



the base of the ulcer may be continually made more compact without the necessary addition of other adhesions.

2. The ulcer may come to the surface at another place, and this may lead to the formation of fibrin and agglutination with adjacent organs. Into the adhesions thus formed the ulcer burrows deeper and deeper; the adhesions, at the same time, extending further and further.

3. There may be formed an acute and greatly circumscribed perforation, sometimes not larger than a pinhead. When this appears in a not overfilled stomach, and the quantity of escaping liquid is not large, it reacts in the manner described under Group 2.

With ulcers at the lesser curvature and its adjoining regions, the particular X-ray feature is the notch. Although it may be a simple matter to discover the notch in typical cases, nevertheless care must be taken not to reach false conclusions. The ulcer may be overlooked easily, particularly so if it be situated very near the cardia. When examined, the patient must be in an oblique position with the upper part of the trunk lying low, and finally in the right lateral position. Doubts may arise from the presence of accidental gastric pouches caused by certain states of contraction, especially by the bulging between two waves of contraction — one following close upon another. A marked picture of a notch with a covered-over bubble of gas may be mistaken for the duodenal ampulla or stomach cap. If doubt persists, repeated examinations after atropine injection, must be made.

A symptom which greatly facilitates the diagnosis of the notch is the existence of a permanent contraction at the greater curvature, at a point corresponding to the notch in question; or even the picture of a cicatrized hour-glass stomach.

When a penetrating ulcer is so far distant from the lesser curvature that it cannot reach the right boundary line of the stomach shadow, it is not demonstrable through the röntgen picture in the anteroposterior view. But such an ulcer could be shown if, after evacuation of the stomach, a shadow of contrast substance should appear at a circumscribed unchangeable place. This is especially true of the ulcers of the posterior gastric wall. For such ulcers the profile view of the stomach should finally be considered.

In stenosing gastric ulcer, the röntgen examination has been an aid, although the ulcer could be diagnosed without difficulty even prior to the röntgen period. The author classifies this condition as follows:

1. Mediogastric stenosis.

The following types of bipartition of the gastric shadow may be mentioned:

a. The purely spastic hour-glass stomach, which is found in connection with the superficial gastric ulcer and penetrating ulcer.

b. The mixed hour-glass stomach, which is a combination of a cicatricial contraction of the stom-

ach with spastic constriction. In these cases the cicatricial contraction is not so pronounced as to substantially interfere with the permeability of the stomach. If such a case should appear, however, it would be due to the spastic component.

c. The cicatricial hour-glass stomach, in which, through further and further contraction of the gastric wall in the region of the ulcer, the lumen is finally narrowed to a minimum. A cicatricial hour-glass stomach cannot be influenced by atropine.

With the pyloric ulcer the problem is to recognize the stenosis as an anatomical one, not caused by pylorospasm only, and later, if possible, to differentiate the various forms of anatomical stenosis.

The occurrence of the following symptoms tends to prove the case to be one of organic stenosis:

1. The clinical symptoms — special prominence of pain, irregularity of the attacks, and short duration of the signs of retention — are characteristic of spasm; but retention existing for a longer time, gradually increasing with uniform troubles, indicates organic narrowing.

2. The time relations of the retention are important. If half of the contrast meal remains after 6 hours, it proves with certainty that there is a functional or an organic impediment. Only a 6-hour residue, corresponding nearly to the entire contrast meal, which would point toward a probable 24-hour time of expulsion, is to be regarded with any degree of sureness, as an organic stenosis.

3. The action of atropine or papaverine on the spasm.

4. The water test. As Von Mering first showed, water will pass the pylorus under conditions in which all solid food is held back by a pyloric reflex.

5. The shape of the stomach, on the whole, remains normal in cases of purely functional stenoses.

In the non-stenosed duodenal ulcer, unequivocal, positive signs of duodenal ulcer are to be had neither in the anamnesis, in the clinical findings, nor in the röntgen picture. With the symptoms of the periodical secondary pain after taking food, often retarded several years, the positive diagnosis must be sought by testing accurately the gastric contents and fæces for blood, since pains of an entirely similar nature are observed without any formation of ulcers. If positive traces of blood are found in both the gastric and intestinal contents, the presence of a gastric ulcer would be indicated; but when traces of blood are found only in the intestines, an ulcer of the duodenum is indicated.

Important as is the presence of blood, it is, nevertheless, not decisive; for, as many observers remark, in actual ulcers blood is often absent or is only present intermittently. When after repeated examinations no blood is found, another indication of ulcer is the sensitiveness to pressure in the region immediately at the right of the median line.

The type of the gastric evacuation in duodenal ulcer is as follows: At first the stomach empties quicker than normally, so that after two or three



hours the whole, or at least the largest part, of its contents is found in the intestine and then descends comparatively quickly. Toward the end, emptying is often retarded so that, on the other hand, a 6-hour residue often remains. Despite this 6-hour residue, the contrast filling in the colon is said to have pushed forward abnormally far, as far as the plexura linealis, according to Jonas. The abnormally quick emptying is explained in the sense of a reflex insufficiency of the pylorus. This duodenal motility is by no means found in all cases of duodenal ulcer. It is, however, also observed in other very different affections of the duodenal region. It is found, according to Bergmann, in hyperacidity without ulcer; in the early stage of carcinoma of the body of the stomach; and, finally, in those diseases which compete with the duodenal ulcer in differential diagnosis; namely, in diseases of the pancreas and the gall-bladder. The duodenal motility is, therefore, but a sign awakening suspicion, not a pathognomonic symptom.

A further peculiarity is the existence of a shadow in the bulbus duodeni, the stomach cap. This is regarded as in some degree characteristic of duodenal ulcer; but its presence is so frequent an occurrence that the author would not lay stress upon it, unless it shows a nicely rounded form or one that runs to a point like a hood.

With reference to the diagnosis of duodenal ulcer, the author states that when the anamnesis and the clinical condition indicate the probability of an ulcer or prove it directly by hæmorrhages, the negative findings in the stomach force the conclusion that the ulcer is very likely situated in the duodenum. The diagnosis of a gastric ulcer is usually a positive one; that of the duodenal ulcer a diagnosis *per exclusionem*. It consists on the positive side of a number of symptoms, some of which are of themselves proof, and which are important only because of their relation to one another.

The stenosed ulcer may be readily differentiated from the non-stenosed type. The chyme normally passes the duodenum so quickly and in such small quantities that the röntgen picture never shows complete filling out, or even a somewhat complete outline of this part of the intestine. If it is densely filled with contrast substance so that its course is followed in its entire extent, or at least, to a certain point, there is an obstruction farther down. Concerning the nature of this obstruction the röntgen picture is of no avail. The stenosis may be regarded as an ulcer, only when another cause is lacking, and when the anamnesis itself indicates duodenal ulcer. These restrictions are also necessary because stenosis is a very rare occurrence with duodenal ulcer.

Closely connected with diagnostics of ulcers are those of adhesions. Abnormal adhesions involving the stomach can be anticipated from the following three conditions:

1. An abnormal position of the pylorus, the stomach being but normally filled.
2. The too slight displacement of the pylorus

upon examination in different positions of the body.

3. From anomalies of the stomach not otherwise explained.

EDWARD L. CORNELL.

**Mayo, W. J.: Chronic Ulcers of the Stomach and Duodenum.** *Ann. Surg.*, Phila., 1914, lx, 220.

By Surg., Gynec. & Obst.

During the first period—1893 to 1900—at the St. Mary's Hospital, operation for pyloric obstruction was applied only to patients with marked pyloric narrowing. In the chronic cases, little differentiation was made between ulcers in the pyloric end of the stomach and those in the duodenum. The results were excellent.

The second period—1900 to 1906—was marked by growth of knowledge, the result of surgical observation. During this period it was recognized that obstruction was a terminal condition and a study was commenced with a view to the earlier termination of a malady which exposed the patient to serious dangers and more or less constant disability and distress. There was much discussion of mucous ulcers and a variety of supposed lesions which were not the result of actual observations at the operating table, but of an attempt to furnish a pathologic basis for the symptoms complained of by the patient.

During the third period—1906 to 1914—there was great improvement in diagnosis and a better technique was developed. The relation of the clinical symptoms to the lesion was shown in the light of operative experience. Great aid was obtained from the use of the röntgen ray.

Up to December 31, 1913, 1,841 cases of acute and chronic ulcers of the stomach and duodenum had been operated on—457 females and 1,382 males. The early clinical view of a preponderance of females over males was thus shown to be in error. Probably the large number of these supposed ulcers in women were the result of pyloric spasm due to gall-stones or intestinal lesions. In 636 of the 1,841 cases the ulcers were located in the stomach; in 1,205 in the duodenum. Multiple ulcers occurred only in 4 or 5 per cent of the cases.

The character of ulcers of the duodenum may differ in many respects from ulcers of the stomach. They are usually found in the upper two inches of the duodenum and many times with no crater such as exists in the stomach, but rather a discolored moth-eaten patch, in the center of which is a slit or dimple-like ulcer, but with typical induration in the peritoneal and muscular coats. Incomplete protected perforations are common. Definite healing of the chronic ulcer of the stomach or duodenum is rare, temporary subsidence of symptoms often being mistaken for a cure, as is the case in cholelithiasis and appendiceal disease.

Gastrojejunostomy is the most generally useful operation. Ulcers should be excised when the operation can be done without too much risk. Duodenal and gastric ulcers obstructing the pylorus



yield equally good results following operation. The greater the distance of the gastric ulcer from the pylorus the greater the mortality and the less certain the cure. Ninety-eight per cent of duodenal ulcers and ninety-five per cent of gastric ulcers will be cured or greatly relieved by operation. The operative mortality of duodenal ulcers is 1.5 per cent; of gastric ulcers, including acute perforations, acute hæmorrhage, resections, etc., 3.8 per cent.

**Mathieu, A.: Studies on the Pathology of Ulcer; Ulcer of the Lesser Curvature** (Études sur la pathologie de l'ulcus. L'ulcus de la petite courbure). *Gaz. d. hôp. civ. et milit.*, 1914, lxxxvii, 745. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The vessels and nerves of the stomach open on the lesser curvature; it is the hilum of the stomach. To this fact is due a number of the symptoms of ulcer of the lesser curvature. About a third of the ulcers of the stomach are on the lesser curvature, about half of them on the pylorus. The pure symptom-complex of ulcer of the lesser curvature is shown only in cases where it is at a distance from the pylorus; it does not make any difference whether it extends more or less over the anterior or posterior surface of the stomach. That point becomes of importance only when it is a perforating ulcer.

Ulcer of the lesser curvature also gives the general symptoms and complications of other ulcers of the stomach. The only one that is peculiar to it is the tendency to form large tumors (giant ulcer), which often arise comparatively unnoticed because they do not cause stenosis. Characteristic of ulcer of the lesser curvature are the very severe and stubborn pains which result from the proximity of the ulcer to the solar plexus. The individual attacks are very severe and frequent, and generally last from 2 to 3 weeks. In the intervals the symptoms may disappear except for an ordinary dyspepsia.

The late pains, stopped by alkalies or food, characteristic of ulcer of the pylorus, appear also in ulcer of the lesser curvature, but much more rarely than in ulcer of the pylorus. Hyperchlorhydria appears regularly, hypersecretion very irregularly; retention almost never occurs. The roöntgen findings are especially important in diagnosis. A constant drawing in of the greater curvature indicates an ulcer opposite it. Niches or diverticula in the lesser curvature are sure signs of perforation of an ulcer, generally into the pancreas. In the same case the picture of the diverticulum may change extraordinarily. Numerous figures in the text illustrate this.

In cases of saddle-shaped ulcer of the lesser curvature, in which cicatricial contraction has brought the pyloric end of the stomach near to the cardiac end, the stomach looks short and has slightly convoluted contours—"snail stomach."

The cases of giant ulcer with pronounced tumor formation are very difficult to diagnose because of their similarity to carcinoma. The differentiation

can often be made in such cases only by exploratory laparotomy.

The diagnosis of the location of an ulcer of the stomach is generally not very difficult, as an ulcer of the pylorus has very characteristic symptoms; but it is often difficult to distinguish between ulcer of the lesser curvature and ulcer of the duodenum, because neither shows signs of stenosis. The differential diagnosis between carcinoma and ulcer may often be made from the fact that the history of the carcinoma does not extend back longer than a year, while ulcer has an extremely long course. Carcinoma following ulcer is much rarer than is generally supposed, and often cannot be recognized clinically.

The author discusses treatment very briefly. Medical treatment seldom brings recovery, but often there is apparent recovery for a considerable length of time. Surgical treatment, resection, as well as gastro-enterostomy, may cause complete recovery, anatomical as well as functional. Gastro-enterostomy with a large opening, as it allows drainage of the stomach, frequently causes complete disappearance of all pain and improvement in the general condition.

RUGE.

**Heyrovsky, H.: Experience with Ulcer of the Lesser Curvature** (Erfahrungen über das Ulcus an der kleinen Kurvatur). *Verhandl. d. Gesellsch. deutsch. Naturf. u. Ärzte*, 1914, No. 2, 391.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Heyrovsky discusses the results obtained in 301 cases of operation for ulcer of the stomach, 74 of them for callous ulcer of the lesser curvature, and agrees with Hochenegg in the belief that gastro-enterostomy is the best method for treating the majority of ulcers. Extrapyloric ulcer is almost as successfully treated by gastro-enterostomy as ulcer of the pylorus. Resection, which is more dangerous, does not give any better results and is indicated only when there is reason to believe that there is carcinoma, and in cases where gastro-enterostomy, in connection with suitable diet, has not brought about cure.

REINHARDT.

**Friedman, J. C., and Hamburger, W. W.: Experimental Chronic Gastric Ulcer; a Second Contribution to the Experimental Pathology of the Stomach.** *J. Am. M. Ass.*, 1914, lxiii, 380.

By Surg., Gynec. & Obst.

Acute ulcer of the stomach has been produced in various ways; viz., by injecting various bacteria intravenously, by feeding bacteria, by injecting certain toxins, such as diphtheria antitoxin; locally, by injecting certain irritants into the walls of the stomach; mechanically, by excising pieces of mucosa, tying off gastric arteries, or injecting various emulsions in the gastric vessels. Most of these ulcers, however, heal rapidly, and it was the aim of the authors in their experimental work to cause these ulcers to run a chronic course.

The method used consisted in causing a stenosis

of the pylorus and the formation of an acute ulcer in dogs, by injecting silver nitrate into the wall of the stomach. The results of the stenosis were marked peristalsis, hyperacidity, and stasis. In most of the cases where necropsy showed dilatation and hypertrophy of the stomach walls, one or more chronic ulcers were present.

The simplest interpretation of these would be as follows: Acute ulcers tend to remain unhealed and exposed to the action of a very active gastric juice for an abnormally long period, and possibly the delay in healing is greater if the food and gastric juice are ground against the ulcers with unusual violence from hyperperistalsis. Consequently, at least three factors are necessary for the production of chronic ulcers in animals: (1) a local destruction of the mucosa, (2) an active or overactive gastric juice, and (3) prolonged or vigorous contact of the two — hyperperistalsis.

The location of a chronic ulcer is usually near the pylorus. Ulcers of the fundus tend to heal, probably because peristaltic action is less in this part of the stomach, and also there is less acidity, or there may even be alk alkalinity. An ulcer near the pylorus is subjected to marked peristalsis, often hyperperistalsis, and many times an overactive gastric juice.

J. H. SKILES.

**Von Eiselsberg, F.: The Choice of the Method of Operation in the Treatment of Gastric and Duodenal Ulcer.** *Lancet*, Lond., 1914, clxxxvii, 296.  
By Surg., Gynec. & Obst.

Gastro-enterostomy has come to be considered the operation most frequently attended with beneficial results in gastric ulcer, but its benefits are not manifest in all cases; in persistent ulcer, especially, its cures are not so numerous.

From an analysis of 334 gastro-enterostomies for this condition several interesting points are brought out; viz., that ulcers situated at a distance from the pylorus are not so much influenced by gastro-enterostomy as those situated at the pylorus; that the most frequent cause of the failure of the operation to cure is the development of a post-operative peptic ulcer of the jejunum; that of 41 patients who died a long time after the operation, 13 died of carcinoma, and 6 through the progressive continuance of the symptoms of the ulcer.

Peptic ulcer appears to be caused by the continuous passage of acid gastric juice into the duodenum, causing the mucous membrane to become eroded. In the less severe forms the symptoms take the form of simple pains, and in these cases repair on the part of the organism can bring about a cure. In these cases of spontaneous cure, contraction and stricture of the gastro-enterostomy area sometimes occur, resulting in a shrinking of the opening to one-third its normal size. In 17 cases of peptic ulcer the chief symptom was the development of a painful induration in the region of the gastro-enterostomy fistula. In 15 instances diagnosis was con-

firmed by subsequent relaparotomy. Either another gastro-enterostomy, jejunostomy, or, finally, an excision of the whole ulcer, was done at the ensuing operation. The results show that the growth of a peptic ulcer presents a very serious complication; even repeated operations are useless and many have at last succumbed to the peptic ulcer. Inquiry into the cause of this condition shows that a high hydrochloric value of the gastric juice must be mentioned first. In some cases the patient has had vascular disease. Care in the after-treatment of cases may go far in the prevention of peptic ulcer; but for those cases already declared, excision is the best treatment, as in the experience of the author, neither gastro-enterostomy nor jejunostomy are sufficient in themselves and in many cases both operations combined are of no avail.

Of 53 cases operated by excision, 9 died, 41 were cured, one improved and afterwards relapsed, and 2 were unrelieved. In a series of 24 cases where jejunostomy alone was performed, 12 deaths occurred, but this high mortality was due to the fact that the operation was performed in the weakest and worst of all cases, so complicated that nothing else was possible.

Von Eiselsberg's experience permits him to lay down the following rules for the choice of method of operation:

1. For acute perforation the best method is the earliest possible laparotomy with irrigation of the peritoneal cavity and closure of the perforation. Whether a gastro-enterostomy should be done afterwards depends on the situation of the ulcer and the general condition of the patient. In hæmorrhage, operation is not indicated. If hæmorrhage is severe, the expectant treatment is the best, but if it has stopped for the time being, an operation should be performed at once before it recommences.

2. In typical stenosis of the pylorus, gastro-enterostomy is the operation of choice, although it is not a complete protection against continuance of the hæmorrhage, as nearly half of the deaths following gastro-enterostomy are due to that cause. However, 60 per cent of cases of pyloric stricture are completely cured by this operation.

3. Unilateral pylorus exclusion should receive especial consideration if the ulcer is still fresh and causing much pain, and in cases of duodenal ulcer.

4. High acidity of the gastric juice favoring the development of post-operative peptic ulcers detract much from the value of gastro-enterostomy and exclusion, and should be performed only where there are special indications, and not in cases where the symptoms are not severe.

5. In cases of ulcer situated at a distance from the pylorus, transverse resection offers the best results, and it must be done when there is the least suspicion of malignancy. It is also the correct operation where there is a high acidity and when the ulcer has invaded neighboring organs. When transverse resection cannot be done, Billroth's method No. 2 should be employed. Billroth's



method No. 1 is third in order to be considered, while partial excision is to be entirely rejected.

7. Jejunostomy is feasible only in the extreme cases—as when the patient is so weak that he must be fed immediately after operation. In cases of peptic ulcer it is the easiest and most rapid of all operations and it leaves the stomach undisturbed.

The technique of gastro-enterostomy as practiced in von Eiselsberg's clinic is that after the method of Hacker; i. e., retrocolica posterior without any length of bowel between the stomach and jejunum. The suturing is done after the manner of Wölfler. Attention is called to the importance of properly suturing the slit in the mesocolon. In pylorus exclusion the stomach is divided between two clamps by a Paqueulin cautery, and both proximal and distal ends are closed with a continuous suture while the clamps are on. When a transverse resection is being done it is necessary to supplement the longitudinal incision in the abdominal wall with a transverse one in order to provide sufficient room. In doing a jejunostomy the principle of Witzelschen is followed, and one point is especially emphasized; e. g., that the catheter should not be introduced into the intestine at any point lying higher in the abdomen than the umbilicus, otherwise it might lead to a kinking of the intestinal loop. E. K. ARMSTRONG.

**Beck, C.: Plastic Operative Methods on the Stomach.** *Med. Herald*, 1914, xxxiii, 251.

By Surg., Gynec. & Obst.

In 1904 and 1905 the author made some experiments with Alexis Carrel to perform an operation, with the intention of making a new route from the pharynx into the stomach. The upper part of this new tube was made from the œsophagus, which was cut across two to three inches below the jugulum. The lower part of the new tube was gained from a flap alongside the large curvature of the stomach. These two tubes were united under the skin of the chest and healed together. The specimens from the experiment were demonstrated in 1905 before the Chicago Medical Society. Since that time the Roumanian author, Jianu, has described the same operation in 1908, and it has been known in the literature under his name. Lately the author has reversed the flap of the large curvature in his experiments, and instead of turning it upward to reach the œsophagus turned it downward to insert it into the jejunum. This makes a new method of gastro-intestinal anastomosis.

**Stewart, F. T.: A Method of Subtotal Gastrectomy,** *Ann. Surg.*, Phila., 1914, lix, 828.

By Surg., Gynec. & Obst.

Stewart describes a method of procedure used by him for doing subtotal gastrectomy without clamps and done in such a way that the suturing necessary to unite the stomach and intestine is completed before either recess is opened.

The steps in the process are as follows:

1. Ligate gastric artery at upper end of the proposed line of section of stomach.
2. Tie off the gastrohepatic omentum.
3. Ligate the left gastro-epiploic artery one-half inch on each side of proposed line of section of stomach.
4. Tie off gastrohepatic omentum.
5. Make opening in transverse mesocolon and draw the upper segment of the jejunum into the lesser peritoneal cavity. Five guide sutures are inserted in the following locations:

The first (A) is passed through the greater curvature, midway between ligatures of the gastro-epiploic artery, and the antemesenteric border of the jejunum. The second (B) unites the posterior wall of the stomach about 3 inches above A to the jejunum. Suture C is passed through the posterior wall of the stomach alone, about one inch above B. B and C are placed on the line through which the stomach is to be amputated. Sutures, corresponding in location to B and C, are placed on the anterior wall of the stomach (D and E). A is drawn upward and to the right. B and D are drawn downward and to the left and held together. C and E are treated likewise, leaving the upper segment of the jejunum surrounded by stomach, and the anterior and posterior walls of the stomach between BD and CE in contact.

A seroserosus suture is introduced from BD to A uniting the stomach to the intestine (linen). Over this is introduced a through-and-through catgut suture.

Grasp the greater curvature of stomach one-half inch from A, fill the lesser peritoneal cavity with gauze. Excise the antemesenteric portion of the intestine and incise the stomach close to the suture line. Then allow the stomach to straighten out, place clamp on the pyloric side of line of the section. Complete the amputation, after approximating the anterior and posterior walls. Remove the pyloric portion of stomach, and invert the duodenal stump.

The advantages of the operation are:

1. There is less cutting to be done; it is more rapid and less difficult than a posterior gastro-enterostomy.
2. There is less chance of post-operative hæmorrhage.
3. There are no clamps in the way.
4. There is less tension on the suture lines and there is less tendency to kink. ISIDORE COHN.

**Martin, F., and Carroll, H.: What Rôle Does Gastro-Enterostomy Play in the Treatment of Gastric and Duodenal Ulcers? Radiographic Demonstration of the Functioning of the Pylorus following Gastro-Enterostomy.** *Md. M. J.*, 1914, lxii, 185. By Surg., Gynec. & Obst.

The article consists of the report of a very interesting case, observations on conditions found, and gastro-enterostomy in general, together with a discussion of a series of X-ray negatives showing the condition of the pylorus after gastro-enterostomy.

The patient was operated on three times. The



first operation was for gastric ulcer, when a posterior anastomosis was done to the lower part of the ileum; the second was exploratory; and the third was a correction of the results of the first operation.

The patient's past history, family history, and habits were negative. Former symptoms were those of pain in the epigastrium an hour after meals, relieved by food; vomiting of blood; and constipation, which followed a year of "bad indigestion." The first operation resulted in relief for a short time, but the former symptoms returned and were more pronounced. Also, at times, practically an entire meal of almost unchanged food was obtained with high enema. There was some retention of stomach contents but no blood and no tumor. At the second operation a mass of adhesions around the anastomosis was found and it was also found that the terminal ileum had been anastomosed to the stomach posteriorly. The patient being in poor condition, the appendix was removed and the abdomen closed. At the third operation the anastomosis was severed, a lateral anastomosis made in the terminal ileum with a Murphy button, and the stoma in the stomach invaginated. The immediate recovery was good. Later observations show that, aside from constipation, the symptoms all disappeared and have never returned.

In this case, at the time of the second operation, stomach peristalsis, which progressed rhythmically to the pylorus in spite of the large stoma, was plainly shown. This explains the question of the nourishment being kept up and the occasional undigested meal appearing in the stools.

The authors then take up the question of the results of gastro-enterostomy in ulcer cases and show that fully 45 per cent of cases have recurred.

Barclay is quoted on the etiology of the ulcer, showing how, from various abnormal conditions in the intestinal canal, a spasm of the stomach ensues. Passage of food causes an abrasion, giving rise to a condition that cannot resist the gastric juice, and an ulcer is formed, which in time perpetuates the spasm.

Gastro-enterostomy influences only pyloric and duodenal ulcers and that in two ways: (1) side-tracking the gastric contents and (2) permitting the reflux of alkaline intestinal juice to neutralize the acid gastric juice. This has no effect on ulcers located in the fundus, lesser curvature, or elsewhere. The results of gastro-enterostomy done for stricture of the pylorus due to tumor or overgrowth are the same as those done for pyloric or duodenal ulcer.

The idea that gastro-enterostomy is a drainage operation, pure and simple, is shown to be a fallacy as long as the pylorus is patent. The hydrostatic conditions in the abdominal cavity absolutely prevent this. As soon as the pyloric spasm is removed by the healing of the ulcer the gastric contents follow their former normal course, and the old ulcer site is again open to trauma.

Martin therefore concludes that (1) gastro-enterostomies are useful only in pyloric and duodenal

ulcers accompanied by pyloric spasm; (2) are of no value in ulcers situated in other places in the stomach; (3) when the pyloric spasm relaxes, the artificial stoma closes, and there is present a tendency towards reformation of the ulcer.

The high percentage of recurrences, the serious and ever-present complications, and the fact that 70 per cent of cancer cases give previous ulcer histories, Martin believes warrants the excision of the ulcer and also indicates the operation of pylorotomy, which he strongly advocates. He does not believe in the operations of pyloric occlusion nor the method of von Eiselsberg.

The article concludes with a short discussion by Carroll of a series of six X-ray studies showing that, given a patent pylorus, the gastric contents will flow through the natural channels rather than the artificial.

In every series a bismuth shadow is seen in the duodenum, the amount depending upon whether the picture was an early or a late one.

PHILLIPS M. CHASE.

**Baetjer, F. H., and Friedenwald, J.: On the Diagnosis of Incomplete Forms of Pyloric Stenosis by Means of the X-Ray.** *Boston M. & S. J.*, 1914, clxxi, 261. By Surg., Gynec. & Obst.

The authors point out the difficulty of diagnosis in early pyloric stenosis and show the value of the X-ray negative in such conditions.

Pyloric stenosis can be divided into two classes: (1) those cases with pronounced symptoms and (2) those in which the symptoms of retention and stagnation are only slight, although both classes are often only stages of the disease in the same case.

The diagnosis of the first class from symptoms and test meals is usually easy, while those of the second class are often overlooked, or an incorrect diagnosis made.

In the latter class, peristalsis is usually absent, vomiting irregular and devoid of the usual features of gastric stasis, and pain not marked. The pain, when present, appears two or three hours after meals and is temporarily relieved by food or alkalies. Another marked symptom is the presence of gastric secretion in the fasting stomach on repeated examinations, and this symptom is always indicative of pyloric stenosis.

The motility of the normal stomach varies greatly, and the best authorities have agreed that the normal rate should be between three and six hours.

The authors advise a bismuth meal of one and a half ounces of bismuth subcarbonate in an ordinary tumbler of water with enough acacia to make an emulsion, as the best for X-ray work.

When there are obstructions within the stomach, caused either by malignancy around the pylorus, or ulcer with cicatrix or idiopathic pyloric thickening, in the early stages, the X-ray shows active contractions but a slow elimination of the contents, and frequently a slight bulging in the prepyloric



region on the greater curvature caused by the food being forced into this region faster than the impaired pylorus can handle it. The size of this bulging depends on the duration of the condition. Sometimes it is only slight, but more often the pylorus is shown on top of the stomach pointing towards the splenic region.

When there are obstructions from without the stomach, caused by a mass or growth pressing upon the pylorus or duodenum, or adhesions around this area, the first condition is soon cleared up by palpation or by the X-ray plate. The second is the more common type, the most frequent cause of which is adhesions around the appendix and cæcum involving the omentum, which in turn draws the greater curvature of the stomach down, preventing a normal emptying of the contents. The X-ray shows the prepyloric region drawn down to the appendix region.

Adhesions from the gall-bladder region so bind down the pylorus and duodenum that the stomach contents are very slowly forced through the narrowed lumen, resulting in a gradual stomach dilation.

Retention from muscular relaxation is caused by sluggish contractions so that the mere weight of the food dilates the stomach. The point of greatest prolapse is the center of the fundus. It is difficult to distinguish this condition from that due to pyloric stenosis of long standing, but a comparison of the two X-ray plates will assist greatly in the differentiation.

In conclusion, the authors state that the X-ray is a very valuable aid in partial pyloric stenosis in those cases in which the trouble is from within; is especially valuable in cases where the obstruction is from without; and emphasize the importance of X-ray examinations always being studied in conjunction with the clinical signs.

PHILLIPS M. CHASE.

**Cole, L. G.: Relation of Lesions of the Small Intestine to Disorders of the Stomach and Cap, as Observed Röntgenologically.** *Am. J. M. Sc.*, 1914, cxlviii, 92. By Surg., Gynec. & Obst.

Cole undertakes to prove that iliac stasis, and particularly iliac dilatation, are directly related to and responsible for certain spasms and even organic lesions of the pylorus, pyloric sphincter, and cap. One is at once reminded of Lane and, in his paper, the author refers to the theories of Lane and the röntgenologic work of Jordan.

Cole has subjected 300 cases to a complete examination of the digestive tract and describes his technique, which consists in the administration of bismuth or barium in buttermilk in conjunction with a Riegel meal of meat, potatoes, and bread, with röntgenography ten hours later and at subsequent intervals until the colon is evacuated. This is supplemented by an examination of the gall-bladder for possible calculi, and of the colon after an opaque clysma. He repeats his previous contention that testing gastric motor efficiency simply by adminis-

tering bismuth in fluid or cereal, is a fallacy. An even more fertile source of error, he thinks, is dating the period of iliac retention from the time of ingestion, and holds that time required for evacuation of the stomach should be deducted for accuracy.

In spasm of the pars pylorica that portion of the gastric lumen is disproportionately reduced in size and corrugated. Spasm of the sphincter may be inferred if the sphincteric lumen and cap is not visualized, if bismuth has been seen passing freely from the stomach previously and subsequently. In spasm of the cap, the bulb shows the appearance of having been twisted or wrung empty of its contents. Long-continued spasm may result in permanent changes, causing contraction of the muscular coat of the pars pylorica, or distortion of the cap similar to the changes resulting from post-pyloric ulcer.

Retention in the stomach and cap may be due to inhibition of duodenal peristalsis, and this inhibition may be the result of iliac dilatation. Röntgenologic evidence indicates that iliac stasis, or rather dilatation, may be caused by: (1) Incomplete evacuation or fæcal impaction in the cæcum or ascending colon; (2) membranes and veils involving the colon and terminal cæcum (*sic*); (3) kinks of the terminal ileum; (4) insufficiency of the ileocecal valve; and (5) chronic appendicitis. These are discussed *seriatim*.

ALBERT MILLER.

**Gray, F. D.: Some Observations on the Technique of Intestinal Anastomosis, with Special Reference to a Modified Maunsell Method.** *Tr. Am. Ass. Obst. & Gynec.*, Buffalo, 1914, Sept.

By Surg., Gynec. & Obst.

The author, after briefly referring to the history of intestinal anastomosis, in which he shows that modern methods of anastomosis were vaguely forecasted by efforts of operators in the middle ages, gives a skeleton outline of the principal varieties of technique practiced within the past forty years — the modern period.

He then states what, in his opinion, are the essential requirements of a sound and generally applicable method of anastomosis; viz., a secure water-tight joint, to be made as rapidly as safety will permit and adaptable to adverse as well as favorable surroundings; also to the various varieties of anastomosis — end to end, end-to-side, and lateral—providing hæmostasis in the cut intestinal edges and leaving as little narrowing of the lumen by flange formation as possible.

Based on these requirements all mechanical aids or devices are ruled out and the "all suture" technique of some sort advised.

A discussion of the merits of anastomosis by a double or single through-and-through row of sutures follows, with conclusions in favor of the single row.

Connell's method is then compared with that of Maunsell's, which has practically become obsolete, but which the author believes could be profitably revived with the substitution of a continuous



locking, or buttonhole, suture of Pagenstecher thread, to replace the interrupted sutures advised by Maunsell, and still described in textbooks.

The interrupted sutures are open to several objections, which are obviated by the use of the continuous locking stitch, which, as applied to the invagination method of Maunsell, has in eight recent cases appeared to the author to furnish a quite ideal method of anastomosis.

**Reder, F.: Remarks on the Surgery of the Ileocæcal Coil.** *Surg., Gynec. & Obst.*, 1914, xix, 96.  
By Surg., Gynec. & Obst.

Reder maintains that the early diagnosis of an intestinal lesion, especially those of a cancerous or tuberculous lesion, is essential to the anticipation of a successful surgical invasion. Too often such lesions are interpreted as chronic appendicitis, colitis, or intestinal indigestion.

Such a diagnostic error often loses for the surgeon good opportunities, negatively influencing the result. From the author's experience, he believes every resection of the ileocæcal coil should receive the most guarded consideration, no matter how favorable the condition of the patient. Every element of danger should be eliminated, and every factor of safety should be embodied in the technique.

In his last two ileocæcal resections Reder has instituted a modified artificial anus with a happy result. His technique is as follows:

The division of the ileum should be such as to give the bowel the necessary latitude to be brought without tension in contact with the colon at or near the hepatic flexure. At least six inches of ileum should be sacrificed. The end of the colon is closed in the accepted manner. The end of the ileum is closed temporarily with a basting stitch so as to avoid spilling any of its infective contents while the operation is in progress.

A lateral anastomosis with an opening not less than three inches is made with the colon. The end of the resected colon is secured to the abdominal wall as far laterally as is possible, that any future displacement of the gut may be anticipated.

After the anastomosis is completed the free end of the ileum is drawn out of the abdomen and sutured to the parietal peritoneum of the wound in its uppermost corner, away from any viscus that might be liable to get caught at the point of fixation. The abdominal wound is closed. If a more advantageous implantation of the ileal end can be made through a small secondary abdominal incision, this should be done and the primary incision closed.

The basting stitch in the ileum is removed and a Paul's tube inserted to drain off faecal matter and flatus. The opening in the small intestine is of service for irrigation of the small bowel when necessary. The large bowel can be irrigated through a modified Paul's tube.

It requires about five to eight weeks for the ileal opening to close. No operative measures of any risk are necessary to aid in its obliteration.

**Case, J. T.: Röntgen Examination of the Appendix.** *N. Y. M. J.*, 1914, c, 161. By Surg., Gynec. & Obst.

Case believes that the rarity of röntgenograms of the appendix has been because of the frequency with which the bismuth examination has been made in the erect rather than the reclining position. With the patient reclining on his back, the tube underneath and the screen above, and the cæcum held aside with the gloved hand or a wood instrument, Case has shown the appendix in more than 300 cases. In one series of 827 bismuth meal examinations, the appendix had been removed from 64 patients. Of the remaining 763 the appendix was demonstrated in 273, or just one-third, apparently a high percentage until it is recalled that patients were examined because of gastro-intestinal symptoms. In a majority constipation was prominent. When the shadow can be demonstrated, it is possible to study the size and length of the lumen; presence or absence of constrictions or kinks; adhesions; drainage (emptying time); relation of the visible appendix shadow to pressure-pain point; and the position, pro-cæcal or retro-cæcal, etc.

At least one examination should be made sufficiently long after the bismuth meal that the ileum may be empty, as a thin shadow remaining in the terminal ileum may be mistaken for the appendix. It is to be presumed that when the appendix rides itself promptly of the bismuth contents the fact of the entry may be of little consequence, but when the appendix remains visible for more than a day or two it is, in proportion to its poor drainage, dangerous. In connection with the suggestion that perhaps, in these cases, the presence of the bismuth might be a menace to health, an inquiry was made as to the fate of therapeutic doses of bismuth. In the examination of five, who were being given bismuth in fifteen grain doses for acute gastro-intestinal disease, bismuth was found in the appendix in every case. In one case it was found on the nineteenth day after the last dose of bismuth. The conclusion seems warranted that the danger of bismuth entering the appendix and, by remaining there, causing acute appendicitis is not greater when given for X-ray examination than when given therapeutically. Even when the appendix is not shown, the X-ray gives definite information as to whether or not a tender area coincides with the shadow of the lower inner border of the cæcum.

D. R. BOWEN.

**Gunn, J. A., and Whitelocke, R. H. A.: Observations on the Movements of the Isolated Human Vermiform Appendix.** *Brit. J. Surg.*, 1914, ii, 92.  
By Surg., Gynec. & Obst.

It is a well-known fact that several of the organs of mammals may be removed and kept for a limited time in unoxygenated Locke's solution without showing any movements whatever. However, if the solution is raised to the body temperature and oxygenated, the organs will show rhythmic contractions. Working along this same line the au-



thors studied the movements of the isolated human vermiform appendix.

The method used was to keep the appendix in Locke's solution until the experiment was to take place. The appendix was then suspended in a bath of Locke's solution at a temperature of 37° to 38° C. with oxygen bubbling through it. The appendix was suspended between two hooks, the lower of which was fixed while the upper, attached by a thread to a lever, recorded the contractions of the longitudinal muscle of the appendix.

It was found that the appendix normally shows rhythmic contractions very similar to the contractions of the enervated colon of the dog, that is, regular strong contractions lasting from 10 to 40 seconds each. Superimposed on these large contractions may be seen smaller ones, not very regular, but having an individual duration of 2 to 4 seconds.

Examination of the rabbit's appendix in Locke's solution shows a curve of contractions very similar to that obtained from the human appendix. Examination of the movements of the rabbit's appendix *in situ* gives a similar result to that in Locke's solution. It seems fair to assume, therefore, that the movements of the human appendix which are observed in Locke's solution are those which occur normally *in situ*.

An attempt was made to discover the innervation of the appendix. As is well known, the large intestine has a double nerve supply: (1) splanchnic or sympathetic nerves, and (2) the pelvic visceral or parasympathetic nerves. These two groups have antagonistic functions, the former by diminishing the tone and abolishing the rhythmic contractions, the latter by increasing the tone and augmenting the rhythmic movements. By the addition of adrenaline to the Locke's solution the contractions ceased and the appendix relaxed. By the addition of pilocarpine to the solution the tone was increased and also the contractions. From this experiment it may be assumed that the innervation of the appendix is similar to that of the large intestine.

J. H. SKILES.

**Mort, S.: Gangrenous Appendicitis with Coprolith, Abscess, Septic Peritonitis, Intestinal Obstruction, Rupture of Intestine, and Fistula.**  
*Glasgow M. J.*, 1914, lxxii, 85.

By Surg., Gynec. & Obst.

The author reports an interesting case of appendicitis which was complicated by intestinal obstruction and peritonitis. The patient, a boy of 15, was sick three days before operation. When the abdomen was opened, pus poured out. The appendix was found to be gangrenous, the whole organ being swollen; the distal portion was distended by a coprolith the size of a small date seed. A portion of the omentum was removed because of gangrene. The wound was disinfected, packed, and drained.

The patient progressed nicely for ten days, when complications set in. The temperature rose to 103° and the pulse reached 114. Two days later

there were signs of peritonitis, the temperature dropping to 97° and the pulse rising to 140. At operation, a median incision was made and pus flowed from the wound. The pus was located in the rectal fascia. On opening the peritoneum a small amount of ascitic fluid escaped. The intestines were inflamed and matted, and between the coils there were sacculated collections of pus. Most of the coils were distended, but on the right side there was a collapsed and flaccid small intestine, one loop of which had fallen into the true pelvis. A band of omentum was found passing round and tightly gripping the loop of gut. When the omentum was removed a rupture two inches in length was found in the intestine. The opening was closed by continuous Lembert silk suture, and the peritoneal cavity was well packed with dry iodoform gauze.

For four days the patient did not improve. The intestine was opened again and the contents poured abundantly from the upper part of the wound. The patient then began to improve. The fistula closed in twenty-two days; and a month later he was discharged cured.

EDWARD L. CORNELL.

**Bainbridge, W. S.: Operative Findings in Twelve Cases of Chronic Intestinal Stasis.** *Tr. Am. Ass. Obst. & Gynec.*, Buffalo, 1914, Sept.

By Surg., Gynec. & Obst.

The one important part of the output of grist from the mill of controversy and discussion which had been built up around the theories of Sir W. Arbuthnot Lane concerning chronic intestinal stasis was the establishment of the facts of the existence of the adventitious intra-abdominal structures, "evolutionary bands," and of the condition of stasis which they cause. Around these two facts has developed some very creditable work by different investigators, but there still remain certain questions to be settled.

It is important to study the human digestive canal as a great drainage system, and to consider this system as a whole, remembering that defects in one or more parts are apt to derange the entire plant.

The author presented a series of cases as illustrations of the following points:

1. The possibility of making the diagnosis of chronic intestinal stasis by clinical examination alone, without the aid of X-ray or fluoroscopic study.
2. The verification of the diagnosis by the discovery, at operation, of the bands and the kinks.
3. The discovery, in certain instances, of conditions which may be interpreted as corroborative evidence of the correctness of Lane's theory regarding the possible remote effects of chronic intestinal stasis.

**Kohn, H.: Multiple Diverticula of the Large Intestine** (Über die multiplen Divertikel des Dickdarms). *Berl. klin. Wchnschr.*, 1914, li, 931.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author first discusses the scanty historical data available in regard to this interesting and little known disease, and then takes up the clinical picture.



The clinical significance of diverticulum of the large intestine is, in itself, slight, but very severe complications may result from it, such as stasis of faeces, decomposition of the intestinal contents in the diverticula, suppuration and perforation, generally not into the abdominal cavity, but into the mesosigmoid and the appendices epiploicae. In other cases calluses are formed in the intestinal wall that make the intestine stiff and hard and simulate malignant tumor.

Three cases are described in men from 56 to 67 years of age. Twice a diagnosis of appendicitis was made and operation performed, followed immediately by death; in the other case colostomy was performed because an immovable carcinoma of the sigmoid flexure was suspected. The patient died after 6 years. In all three cases autopsy showed a number of diverticula, which in the first case were limited to the rectum and sigmoid, in the second case involved the whole large intestine, and in the last case had transformed 10 cm. of the flexure into a thick, hard tumor.

He discusses the diagnosis, based on these three cases, and points out that in every doubtful case of intestinal disease this condition should be thought of. The fact that the disease is found almost exclusively in men is due, he thinks, to the fact that the abdominal pressure in old women is slight, while in men, in connection with peristalsis and the development of gas, the pressure either distends the vessels and the openings of the vessels, or exercises differential pressure on the ingesta, and thus leads to a distension of the interstices in the intestinal walls.

NORDMANN.

**Mayo, W. J.: Resection of the First Portion of the Large Intestine, and the Resulting Effect on Its Function.** *J. Am. M. Ass.*, 1914, lxiii, 446.

By Surg., Gynec. & Obst.

Variation in the position of abdominal viscera within limits should not be considered abnormal. The large intestine, with its short heredity and changing function, has less fixed characteristics than the more primitive small intestine. The proximal half of the large intestine has an important assimilative function, being closely related embryologically and functionally to the small intestine. The function of the distal half of the large intestine is mainly storage. It is probable that in the past too much importance has been attributed to purely incidental changes in the position and attachments of the large intestine, thus giving more or less normal bands, kinks, and adhesions a fictitious rôle in the supposed production of symptoms.

By the cæcum is meant the head of the colon or cæcocolon, the cæcum itself being only from 1.5 to 3 inches in length. It has a most important function in assimilation. Reasoning from analogy, probably the functional activity of the proximal half of the large intestine concerns vegetable intake, as it is large in the herbivora and small in the carnivora. Man is rapidly increasing his intake of flesh. If unassimilated, it undergoes decomposition and these

products, thrown into the large intestine, may be absorbed with deleterious effects, disturbing the metabolic balance.

Adami and others object to the term "auto-intoxication" and propose to substitute "subinfection." It has not been shown that all of the toxic products are due to infection; apparently some are essentially chemical. Glandular secretion of the cæcocolon is important in metabolism. It is possible that hyper- and hypo-activity of these glands may have effects which can be compared to like disturbances in the thyroid, adrenals, and other glands of internal secretion. Food intake in the stomach causes emptying of the lower ileum in the cæcocolon. It is possible that some constipations and toxic conditions have their origin in the ileum rather than in the colon.

Commenting on the physiologic basis of Lane's pioneer work, the author states that ileocolostomy is sometimes unsatisfactory on account of the filling of the blind end due to reversed peristalsis. Complete colectomy is a serious operation on account of removal of the entire omentum which, subsequently, may give rise to extensive troublesome intestinal adhesions.

Removal of ten inches of the ileum, cæcum, ascending colon, hepatic flexure, and a portion of the transverse colon is a satisfactory operation. Cases are rare in which such an operation is indicated. The entire subject is in the experimental stage and haste must be made slowly.

**Lardennois, G.: Total Colectomy and Subcæcal Colectomy; Operative Technique** (Colectomie totale et colectomie souscæcale; technique opératoire). *J. de chir.*, 1914, xii, 701.

By Surg., Gynec. & Obst.

The author discusses the technique of each kind of typical colectomy, but does not enter into a discussion of indications. He thinks the method used by Sir Arbuthnot Lane can be improved upon in several particulars. These improvements are: (1) separation of the great omentum from the transverse colon and mesocolon; (2) conservation of the great omentum; (3) use of the inclined rather than the horizontal position while the intestine is being sectioned and the anastomosis made; (4) the use of a subcæcal colectomy with an anastomosis between the cæcum and sigmoid, instead of a total colectomy. This does away with the pain which persists for so long after total colectomy.

There are distinct advantages in dissecting the great omentum. In the first place it isolates the transverse mesocolon, a thin layer of cellular tissue on which are clearly outlined the right and left colic arteries, forming Riolan's arch. The arteries having been followed up to their origin, only three ligatures of No. 0 catgut are required to secure absolute hæmostasis of the ascending, transverse, and descending colon. With the old method a large number of ligatures were blindly placed close together, strangulating irregular areas of tissue. These areas remain-



ed painful for a long time after the operation, even when covered with peritoneum. Moreover, when the mesocolon is sectioned near its origin it leaves only a small incision, situated deep down so that no peritonization is necessary. Ligation *en masse* of the mesocolon and great omentum offered another disadvantage. It brought the greater curvature of the stomach into juxtaposition with the transverse mesocolon, the right and left colic arteries, and the duodenojejunal angle. The tension caused by the ligatures and the cicatricial retraction following the operation aggravated this condition and doubtless caused the gastric troubles that so frequently followed colectomy. The dissection of the omentum from the colon also facilitates the liberation of the flexures of the colon. The flexures are each fixed, the left one higher and more firmly than the right, by a thin broad fibrous ligament, extending from the lateral parietal peritoneum to the upper edge and anterior surface of the colon. They are exactly in a line prolonged from the great omentum. When the latter is dissected and raised, nothing is simpler than to slip the index-finger between the mesocolon and these suspensory ligaments — which are fibrous and nonvascular — cut them and lower the flexures. If the omentum is not dissected the ligaments cannot be cut without risking the vessels of the mesocolon underneath. Lane himself once had a severe hæmorrhage which could be explained only in this way.

There is no doubt that the conservation of the omentum is desirable. Its value in abdominal statics and as a defense for the peritoneum indicate this. But even if it has to be sacrificed it should be dissected previously, for the reasons just given. None of the patients have shown signs of inflammation of the omentum, and in one patient who had to be operated on later for another purpose the omentum was found to be in good condition and sufficiently movable.

With a little practice dissection is possible, even if there are adhesions and pericolicitis, if the omentum is not absolutely contracted and cicatricial. The most that is risked is the leaving of some fragments of the posterior fold of the omentum adherent to the mesocolon, and as all the important vessels run through the double anterior fold, and as this alone is fixed to the greater curvature of the stomach, that fact is not of much importance. The author does not practice colectomy for simple chronic intestinal stasis if the colon is perfectly normal. He believes that such colons may be restored to normal function by medical treatment and possibly by a palliative operation. He performs colectomy only when chronic colitis has caused degeneration of the walls of the colon and such extensive adhesions that their destruction would be difficult and almost certainly followed by recurrence. This shows that the separation of the omentum and colon can be practiced in patients who have adhesions, pericolicitis, and even epiploitis.

Lane operates in the horizontal position, but the author prefers the inclined position for the purpose

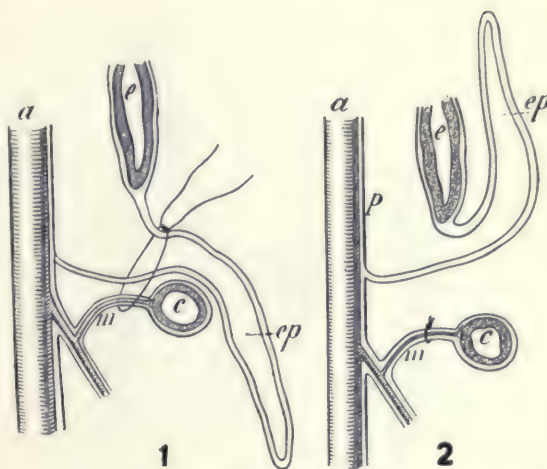


Fig. 1. (Lardennois.) Ordinary ligation of the transverse mesocolon with the great omentum. Bad technique.

Fig. 2. (Lardennois.) Proper ligation of the transverse mesocolon with the omentum dissected off and lifted up. Good technique.

of getting the mass of the small intestines out of the way and securing more perfect isolation of the field of operation.

Subcæcal colectomy has distinct advantages over total colectomy. In the latter, in addition to the pain from the ligation *en masse* and the traction on the stomach by the cicatricial contraction of the mesocolon, there is apt to be excessive diarrhœa and reflux of gas into the small intestine. The valve of Bauhin, which is necessary to perfect functioning of the small intestine, is suppressed. This is one of the reasons why the author is inclined to question the value of ileosigmoidostomy — Lane's short circuit. Therefore he devised the operation of subcæcal colectomy with the formation of an end-to-end or end-to-side anastomosis of the cæcum and sigmoid, after resection of the base of the cæcum.

The fact that the cæcum is prolapsed, distended and too movable, does not necessarily indicate that it should be sacrificed. Instead of being the cause of the trouble, as is so often assumed, it is more apt to be the victim of colitis of the adjacent segments, dilated because of their defective function and degenerated from progressive distension. After subcæcal colectomy and typhlosigmoid anastomosis, the liquid contents of the cæcum are easily evacuated.

A cæcum well drained into the sigmoid can cause no trouble, and there are advantages in retaining it unless there are marked lesions of its walls. The general direction of the small intestine is maintained, and the last few centimeters of the ileum preserved, where absorption is intense and lymphoid organs abundant. The normal implantation of the small intestine into the large is preserved, likewise the valve of Bauhin, which regulates the

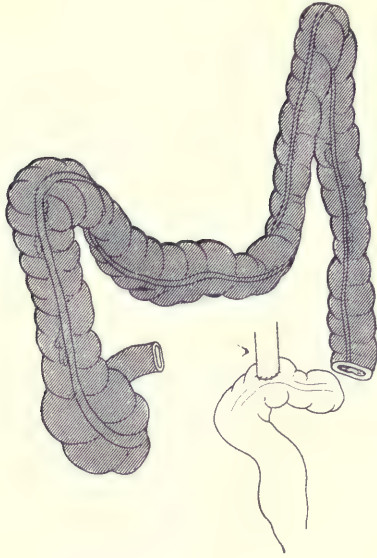


Fig. 3. (Lardennois.) Total colectomy. Ileosigmoid implantation.

function of the small intestine and offers a barrier to reflux. Moreover, in retaining the cæcum we preserve the second stomach in which the greater part of the starch and cellulose is digested, and which also furnishes a safety chamber in case of sudden reflux from the sigmoid. Lane's partisans object that in preserving the last few centimeters of the ileum the risk of leaving a Lane's kink is taken. In the first place these bands are extremely rare, and in the second, unless they are very marked, they cannot interfere greatly with the evacuation of the small intestine if the cæcum is well drained. At any rate if the surgeon finds such bands he may destroy them, not by cutting them, but by separating them at their insertion into the intestine, which will prevent recurrence. The liberation of the cæcum, which is necessary for its anastomosis with the sigmoid, would free the intestinal insertion of a Lane's kink if there should be one. It has been held that the cæcum should be extirpated because it is the place in the intestine where bacteria are the most prevalent; but it would seem that a cæcum regularly evacuated would be disinfected; moreover, examination after total colectomy has shown that the bacterial flora normally inhabiting the cæcum take up their abode in the terminal segment of the small intestine. It seems desirable, therefore, to preserve the cæcum and the adjacent portion of the ascending colon unless there are distinct contra-indications.

The operative technique is described as follows:

1. In total colectomy, chloroform is to be preferred to ether anæsthesia because it is more profound. The patient is placed in the horizontal position, the operator on the right side with his two assistants opposite him. The median incision is 20

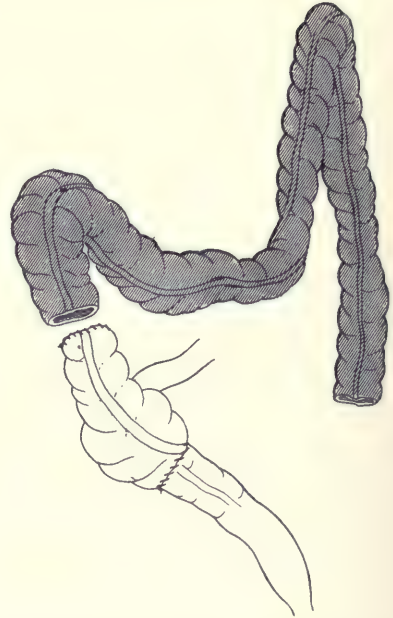


Fig. 4. (Lardennois.) Subcæcal colectomy. End-to-end typhlosigmoid anastomosis after resection of the base of the cæcum.

to 22 cm. long, one-third of it being above the umbilicus, two-thirds below. The abdominal cavity is inspected carefully, and a Ricard's retractor with a triple valve inserted. The great omentum and colon are brought outside the abdominal cavity, the cavity being protected with compresses. The omentum is lifted. The line of junction of the omentum and colon is marked by fine folds in the peritoneum. The assistant pulls the omentum and colon in opposite directions, keeping the omentum spread out on his open right hand, while his left hand twists the colon from above downward. The operator, taking the omentum in his left hand, passes a bistoury over the fine folds along the line of junction from the left to the right end of the transverse colon. The space is thus opened up and the opening is enlarged by the finger, the assistant holding the parts aside as they are separated. The dissection commences on the colon and is continued on the mesocolon, becoming easier as the attachment of the mesocolon to the posterior wall is approached. Soon the omentum is laid aside at the upper angle of the wound and the whole superior surface of the mesocolon is exposed to view. The left index-finger, following up the mesocolon, comes to the suspensory ligament of the splenic flexure, which being non-vascular can be cut by the bistoury without any danger to the mesocolon or its vessels. The splenic flexure is thus detached and lowered. The dissection of the parietal peritoneum is then followed up toward the median line as far as desired.

The right flexure is freed in the same manner as



the left. There may be some adhesions around the gall-bladder but they are easily broken up. The transverse colon with its mesocolon is lifted up and the omentum is replaced in the abdominal cavity. Then the arteries are seen outlined on the thin mesocolon. A ligature of No. 0 catgut is placed on the right colic vessels, then on the accessory right colic vessels, and a third on the left colic vessels at the place where the pelvic colon is to be sectioned. Hæmorrhage may be prevented by placing small Kocher's forceps on the peripheral ends of the ligated vessels and cutting the mesocolon between Riolan's arch and the parietal insertion of the mesocolon. The transverse, ascending, and descending coli, freed from their mesocolon but remaining fixed at the extremities by their continuity with the cæcum and the sigmoid, are lifted up, thus forming a great arch. The patient is then placed in the inclined position, which takes the mass of small intestines out of the way. The place for section of the colon is selected. A small ligature is all that is necessary for hæmostasis of the mesocolon. The intestine is crushed with a Doyen's forceps and a ligature of No. 1 silk is placed here, a strong forceps — not a clamp under which the intestine slips — being placed just above. The colon is then cut with the thermocautery between the ligature on the lower end and the forceps on the upper. The upper segment is placed outside the field of operation, and the lower end is closed with the usual precautions. The cæcum and the termination of the small intestine are then freed from any adhesions that may exist. Hæmostasis is accomplished by ligation of the ileocolic artery. The incision of the ascending mesocolon is prolonged in the mesentery to the point chosen for section of the ileum. A strong forceps is placed on the distal end of the ileum; a smaller forceps, firm but not heavy enough to produce trauma, on the proximal end. After the intestinal contents are pushed back, a clamp is placed for safety a few centimeters farther up. Section is made with the thermocautery, and the distal end of the ileum is thrown out of the field of operation. The removal of the colon is completed.

An end-to-side anastomosis is made between the ileum and sigmoid, according to the ordinary rules. The dissection of the ileocolic mesentery has left a flap of mesentery which it is well to suture to the posterior peritoneum with a few fine catgut sutures to prevent the formation of a dead space as well as to fix the end of the ileum. Lane drains the anastomosis, and after the operation is completed he introduces a rubber tube the size of the little finger through the anus and rectum. It is passed up through the anastomosis into the terminal portion of the small intestine, and projects about 15 cm. outside the anus. Lane's long experience has doubtless shown that it is better to drain directly than to leave the patient subject to an intermittent painful diarrhoea. The author also thinks that this tube has the advantage of preventing movements of the small intestine over the anastomosis which constrict

the end of the ileum, and that it thus prevents the painful spasms that he has observed for several weeks after the operation. Perhaps this drainage also prevents distention above the anastomosis and thus makes it more secure. The tube is evacuated spontaneously by the patient. The omentum is replaced over the intestines, but it is not advisable to pull it downward. In some cases he has attached it loosely to the anterior wall of the abdomen to prevent its pulling on the greater curvature of the stomach. The wound is closed without drainage.

2. The first stages of the operation are the same as for total colectomy. Section should be performed first on the end that is to be closed, and last on the end where the anastomosis is to be made. Section may be made with the bistoury, but the author prefers the thermocautery. The place chosen for section of the sigmoid is variable, depending on whether an end-to-end or an end-to-side anastomosis is to be made. The caliber of the sigmoid determines the question; if it is large the end-to-end anastomosis is ideal. Flaccid, atonic pelvic colons are eminently adapted to end-to-end anastomosis. In one case where marked spasm was recognized clinically the spasm was overcome by small irrigations of belladonna given two days before the operation and on the morning of the operation. The appendix is generally removed before the base of the cæcum is resected. A clamp is placed on the cæcum, and another on the sigmoid a few centimeters below the section in order to prevent reflux. The base of the cæcum is resected and then the anastomosis is performed according to the usual rules. A tube may be used as in Lane's operation. The end-to-side anastomosis is the same except that the cæcum is implanted into the side of the sigmoid.

A. Goss.

**Bookman, M. R.: Congenital Malformations of the Rectum and Anus.** *N. Y. M. J.*, 1914, c, 415.

By Surg., Gynec. & Obst.

The anus is first noticed in the early weeks of the embryo as a dimple in the epiblast and is known as the proctodeum. The lowermost portion of the hind-gut, which eventually forms the rectum and sigmoid, is separated from the proctodeum by a thin septum which normally disappears about the fourth week of intra-uterine life, leaving those structures in continuity. At the time of fusion of the anal depression with the hind-gut, it has opening into it, anteriorly, the urachus, and, posteriorly, the intestine. This is called the cloaca. During the second month of development this cloaca is divided transversely by a septum, which later forms the perineal body. Persistence of the fetal openings result in the various congenital fistulæ, while the non-disappearance of the septum between the proctodeum and the hind-gut constitutes the salient feature of imperforate anus and rectum.

The simplest forms of rectal malformation are handled comparatively easily, but with the increasing distance between the proctodeum and the lowest portion of the primitive rectum, greater difficulties



are encountered. In cases where a septum is found, the use of an exploring needle greatly facilitates matters; and when gas or meconium escapes, it serves as a guide for further dissection. Imperforate ani are best treated by a vertical incision over the perineum and gradual dissection upward aided by the exploring needle. Should the bowel be found, it should be brought down and sutured to the skin. If it is not to be reached from below it is better to do a colostomy, and attempt to readjust matters later. The establishment of an artificial anus, however, usually predicates disaster; consequently every justifiable attempt should be made to effect a junction of the rectum with the anus. After operation the rectum must be kept dilated with the finger or with suitable bougies.

Rectovaginal and recto-uterine fistulæ may be repaired when the child is older, but rectovesical and recto-uterine fistulæ should be repaired as soon as conditions permit, for when colon bacilli appear in the stools, ascending infections of the urinary tract are common. E. K. ARMSTRONG.

**Heyd, C. G.: A Procedure for the Repair of Accidental Injuries to the Rectum.** *Surg., Gynec. & Obst.*, 1914, xix, 224. By Surg., Gynec. & Obst.

The author draws attention to the frequency of accidental injuries to the rectum low down in the pelvis and incident to the radical extirpation of the uterus and adnexa for malignancy. The technique is a modified "tube-operation," such as is used in sigmoidorectal anastomosis. A fairly rigid rubber tube, about ten inches long, perforated near its upper end, is introduced into the rectum through the anus, and attached by means of a No. 2 chromic transfixion suture to the anterior rectal wall about one-half inch above the injury. Upon gentle traction on the tube the two lips of the rectal defect are approximated and sutured with No. 2 chromic catgut. Upon further traction a partial intussusception of the anterior rectal wall is produced, whereby two peritoneal surfaces are brought together with a right-angle Cushing suture of Pagenstecher thread. The upper portion of the rectum is mobilized by two pararectal incisions through the peritoneum. Gentle but continuous traction is exerted by suturing the tube to the anal margin. The tube is removed at the end of five days.

#### LIVER, PANCREAS, AND SPLEEN

**Cheney, W. F.: Syphilis of the Liver, Imitating Cirrhosis.** *Am. J. M. Sc.*, 1914, cxlviii, 157. By Surg., Gynec. & Obst.

Cheney's report is based upon six cases: four of syphilis of the liver; one of carcinoma of the liver, diagnosed as syphilis but proved by autopsy to be carcinoma; and a case of probable syphilis of the liver, still under treatment.

The first case is interesting, in that operation was performed for tumor of the lower abdomen accompanied by ascites. After hysterectomy the

liver was felt to be hard and nodular, and the pathologist's report of section was syphilitic cirrhosis. After operation the patient developed hydrothorax as well as ascites. The Wassermann test showed reaction of blood, and ascitic and pleural fluids were triple X positive. Intensive specific treatment, however, was futile because of the great destruction of liver proved at autopsy.

From the clinical data, the second case seems to be a case of syphilis of the liver and pancreas, with a small liver and a large spleen. With intensive specific treatment the patient has been greatly benefited.

The case of carcinoma of the liver, mistaken for syphilis, showed triple X Wassermann reaction, but this was due to concurrent syphilis and not to the enlarged liver.

The livers in this series of cases were both large and small, and the enlarged ones on palpation have appeared smooth and were usually quite tender.

Cheney concludes that in any case which appears to be cirrhosis of the liver, the blood should always be examined for syphilis and if the Wassermann reaction is positive, a vigorous specific treatment will often produce marvelous improvement. In cases with positive reaction, liver disease may not be specific and in such cases specific therapy will be of no avail, but the therapeutic test will give valuable information and will do no harm.

TORR WAGNER HARMER.

**Wyard, S.: A Case of Congenital Atresia of the Bile-Ducts.** *Lancet*, Lond., 1914, clxxxvii, 495. By Surg., Gynec. & Obst.

The case is reported of an infant, which was normal at birth but became jaundiced when three weeks old. When four months old she developed snuffles; a rash, especially around the anus; and passed clay-colored stools. The liver was much enlarged but the spleen could not be felt. The mother had had five other children who were all well, and had had one miscarriage six years previous. When the infant was ten months old a little free fluid was found in the peritoneal cavity, which gradually increased in amount. The jaundice became more intense, and the child died when one year old.

The author discusses the pathology and etiology of this condition, giving in detail the post-mortem findings in this case. The veins of the abdomen were found enlarged and the abdomen filled with a bile-stained fluid. The liver weighed 12 ounces and its surface was nodular. It was firm in consistence and tough on section. The cut surface presented a mottled appearance. The hepatic ducts were completely obliterated, and at a very short distance from their junction faded away into the connective tissue of the gastrohepatic omentum, so that they could not be traced to the duodenum — not even a fibrous cord remaining to represent them. The gall-bladder was merely a fibrous cord deeply buried in the liver substance. Like the common bile-duct,



the cystic duct was lost in the gastrohepatic omentum and could not be traced to its junction with the common duct. The spleen weighed three ounces.

Microscopically, the liver was extremely and markedly fibrosed. The normal lobulation was entirely lost and the hepatic cells showed all stages of degeneration. There was a slight degree of fatty degeneration.

The author believes that the condition was due to a cholangitis. A gastro-enteritis traveling from the duodenum up along the common bile-duct would be capable of producing all the appearances found. He also believes that the same agent which caused the ascending cholangitis, at the same time, by absorption and circulation in the blood through the liver, initiated a cirrhosis which was aided and increased later by the obliteration of the ducts.

EDWARD L. CORNELL.

**Jackson, R. H.: Anterior Choledojejunostomy; with Report of a Case.** *Surg., Gynec. & Obst.*, 1914, xix, 232.

By Surg., Gynec. & Obst.

Reconstruction of the common bile-duct in man is often disappointing in results, owing to the debilitated condition of the patients and the pathologic alteration of the surrounding tissues. Re-establishment of a physiologically active bile-duct in man has not been placed in the category of well-tried surgical procedures with definite indication and technique. When essayed for the first time, there is apt to be an undue amount of hesitancy in the performance of the operation, with a great deal of doubt as to its efficiency when completed. These considerations led the author to adopt, in his second case, the simple maneuver of utilizing a more mobile portion of the intestinal canal than the duodenum in its shortened and somewhat atrophied condition — the result of previous pylorotomy — offered. A loop of jejunum — that portion embracing its first eighteen inches — was brought up in front of the transverse colon, and the stump of the common duct united to it by a small-caliber rubber tube inserted into the stump of the duct and fastened with a linen stitch, the other end of the tube being inserted into a small opening in the bowel, the wall of which was then folded over the tube and as much of the duct as possible — about one-half inch. The lateral surfaces of the jejunum were then abraded and tacked to the adjacent surfaces of the liver and pancreas. The patient made an uneventful convalescence and nine months after operation continues to be in good health.

**Osler, W.: Splenectomy.** *Lancet*, Lond., 1914, clxxxvii, 380.

By Surg., Gynec. & Obst.

Osler states that clinical experience has enabled the profession to recognize certain groups of cases in which splenectomy can be done and other groups in which it is contra-indicated. In the latter class should be placed all cases of leukæmia — no good results having followed its use here; also cases in which the spleen is enlarged but in which there is

also disease of the liver; and also in cases of syphilitic enlargements of the spleen. As regards the latter group, however, it is thought possible that splenomegaly of congenital specific origin in children might be successfully treated by splenectomy.

Splenectomy is indicated in the following three types of cases: (1) Cases in which the spleen has been enlarged for years, but the patient is in good general health. The benefit of such operation accrues because such cases, if untreated, often go on to chronic anæmia; there may also be leucopænia, enlargement of the liver, and even jaundice and ascites. (2) In some cases of Banti's disease. (3) In children in those cases in which the splenomegaly is acute and progressive. There remains a doubtful series of cases in which the removal of the spleen may do good, such as some progressive forms of pernicious anæmia, Addison's disease, hæmolytic jaundice, kala-azar, and primary tuberculosis of the spleen.

DONALD C. BALFOUR.

## MISCELLANEOUS

**Deaver, J. B.: The Pathology Underlying Abdominal Symptoms.** *J. M. Soc. N. J.*, 1914, xi, 328.

By Surg., Gynec. & Obst.

One of the most noteworthy advances in medicine is marked by the enlargement of the group of organic diseases at the expense of so-called "functional disorders." This is especially true of diseases of the abdomen. One cause of many failures to recognize organic abdominal disease is the tendency to demand typical syndromes for diagnosis. It is important that particular emphasis be laid on the remarkable variations from type which occur in the best understood diseases. From this standpoint a survey is made of a recent series of 121 cases of gall-bladder disease, 28 of duodenal ulcer, 38 of uncomplicated pancreatitis, and 585 of chronic appendicitis. In gall-bladder disease the evidence indicates that the average patient received his infection in the fourth decade and in many instances much earlier, so that this must be regarded as an affection of comparatively early years. In 10 per cent of the cases pain was never localized in the region of the gall-bladder; and in about the same per cent no tenderness was present. Jaundice was absent in four-fifths of the cases, and it should be emphasized that to wait for this symptom would be to miss the great majority of cases of cholecystic disease. The test meal usually showed subacidity but possessed no diagnostic uniformity; the X-ray and fluoroscope were of practically no assistance.

Similar conditions exist in respect to duodenal ulcer. Classical cases may be recognized from history alone, but the majority do not conform to the classical picture. In the above series pain was present in the epigastrium in 21 cases; in the right hypochondrium in 7, it varied remarkably, however, in severity and character. The relation of the pain to eating is almost invariably constant in the early stages, but as the ulcer migrates, becomes calloused,



or excites periduodenal adhesions, the relationship may be much obscured. In 13 cases only did the pain occur at a definite period after the taking of food. The rarity of vomiting and particularly of hæmatemesis is exemplified in this series. Hyperacidity was present in less than half the cases.

In chronic pancreatitis the variations from type and consequent difficulties of diagnosis are even greater than in the preceding groups. A very interesting group is composed of cases of upper abdominal indigestion depending upon chronic appendicitis. Of the 585 cases of chronic appendicitis, 26 were of this group. In none of these cases were the symptoms those of appendicitis. In 17 cases the pain was in the epigastrium; in 4 over the gall-bladder; in 2 it was central; and in 3 in the lower abdomen. In 3 cases it seemed to radiate. Only 6 cases gave a history of vomiting. Some of these

cases simulated disease of the gall-bladder, others simulated duodenal ulcers. The gastric analysis presented no uniformity. Most of these cases were referred and operated upon in the belief that upper abdominal disease was present.

The author concludes with a discussion of points helpful in the differentiation of unusual cases, but concludes that there are groups of symptoms which certainly mean surgical disease of the abdomen, but which do not point with certainty to the exact nature of the trouble. Many cases have been fortunate enough to secure a curative operation because of an incorrect diagnosis; but many others have been long denied the benefit of surgery, because of the over-zealous desire of the physician to be sure of his ground before consulting a surgeon. It is maintained that chronic abdominal invalidism is in almost all cases caused by a surgical condition.

## SURGERY OF THE EXTREMITIES

### DISEASES OF THE BONES, JOINTS, MUSCLES, TENDONS. CONDITIONS COMMONLY FOUND IN THE EXTREMITIES

**Marcozzi, V.:** *Experimental and Histological Study of the Action of Calcium Salts in Bone Formation* (Intorno all'azione dei sali calcio nell'osteogenesi. Ricerche sperimentali ed istologiche). *Giorn. internaz. d. sc. med.*, 1914, xxxvi, 241.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In 100 parts of bone-ash there were 53.31 parts of phosphoric acid, 37.58 of calcium, 5.47 of carbonic acid, 1.22 of magnesium, and 1.66 of fluorin; calcium and phosphoric and carbonic acids, therefore, made up the greater part of it. The author mixed two parts of calcium phosphate and one of calcium carbonate and inserted them in the form of very fine sterilized particles under the skin, into the peritoneum, on bone that had been freed of periosteum, into the open marrow cavity of a bone, and between broken or resected bones of rabbits, in order to determine the effect of calcium salts on the tissues.

In the subcutaneous connective tissue and the peritoneum they caused a small-celled infiltration without producing degeneration of the tissue and were absorbed very slowly into the tissues. Applied to a bone which had had the periosteum and a thin shell of bone removed they caused rapid reproduction of the bone with the formation of characteristic exostoses. When the calcium salts were placed as a filling in the marrow cavity of a bone that had had part of its wall removed, they were completely absorbed, and after 30 to 45 days were replaced by new-formed bone. Brought into contact with broken or resected bones they produced enormous callous formation, and a quicker union of bone.

The author showed with stained microscopical specimens that there was in all the experiments an abundant production of cartilaginous tissue, which was quickly transformed into bone tissue. Small

bits of calcium salts were seen inside the cartilage cells, where they had been ingested by phagocytosis of the latter. HERHOLD.

**Schickele:** *Ovaries and Growth of Bone* (Ovarium und Knochenwachstum). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 722.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports two experiments on female dogs which show the influence of early castration on the growth of bone. In the first experiment there was only a slight difference in the length of the long bones in the castrated animal and in the control animal, and the epiphyseal lines were also the same. In the second experiment two female dogs, from a litter of three, were castrated in the seventh week, while the third was used as a control animal. After 14 months the control animal was decidedly smaller than either of the castrated animals, but these two also varied in size, which may well be attributed to the difference in race of the parents. The epiphyseal lines were ossified in the control animal, and still noticeably present in the castrated ones. A similar experiment performed earlier on rabbits showed no effect of castration on the growth of bone. The genitals were always decidedly atrophied in the castrated animals. RUHEMANN.

**Fay, O. J.:** *Traumatic Parosteal Bone and Callus Formation*. *Surg., Gynec. & Obst.*, 1914, xix, 174. By Surg., Gynec. & Obst.

Fay reports six cases of traumatic parosteal bone and callus formation with four histological examinations — three of primary parosteal masses and one of a recurrence. In these histological reports the presence of an old hæmorrhage, the entire absence of any inflammatory changes, the intimate relation existing between the muscle and the callus mass are the most interesting features. Another striking



feature is the important rôle played by cartilage in the formation of bone. The whole picture is that of a reparative process, comparable perhaps to the formation of callus in fractures, and not that of an inflammatory process, an ossifying myositis. For this reason the author advocates the use of the term parosteal callus instead of the misleading appellation ossifying myositis. While the present status of the knowledge of the growth of bone does not permit of an absolute statement as regards the origin of the callus mass, there seems to be much evidence to support the metaplastic theory; a changed relationship to the nerves, a changed nutrition, and a temporary lack of functional activity result in a transitory loss of the specific function of the cells of the intramuscular connective tissue, and cartilage and bone are formed.

The history of trauma and the clinical picture may suggest that the mass palpated is a parosteal callus, but the chief aid in diagnosis is the X-ray — the outlines of the bone shaft are clean-cut and the shadow of the parosteal mass is separated from it by a zone of light. The time for operation is determined by the "ripening" of the callus mass as shown by the correspondence of the clinical and the X-ray pictures, and by the clear outlines in the latter. An early operation necessitates a considerable sacrifice of tissue, but if operation is postponed until the cells have regained their normal function, a conservative operation may be performed.

**Lett, H.: Tuberculous Disease of Bone.** *Clin. J.*, 1914, xliii, 497. By Surg., Gynec. & Obst.

The author gives a statistical and didactic account of bone tuberculosis. The interesting points in the discussion are summarized as follows:

1. In a series of tubercular bone cases, 61 per cent were found to have pure cultures of the bovine bacillus.

2. The site of invasion is, in the great majority of cases, in the end of the diaphysis just below the epiphyseal line, but it may occur anywhere in the shaft, or in the epiphysis, or even in the periosteum.

3. True sequestra are frequent.

4. Diffuse or localized tubercular osteomyelitis of the shafts of the long bones occurs with some frequency. Radical removal of tuberculous foci, either by curetting or by subperiosteal resection, is advocated in some cases. F. C. KIDNER.

**Da Costa, J. C.: The Causal Relation of Traumatism to Tuberculosis.** *Ann. Surg.*, Phila., 1914, lix, 909. By Surg., Gynec. & Obst.

The author, after an exposition of some of the confusion and bewilderment so often presented in the courts during the trials of damage suits, seeks to answer the question, "Is an injury ever a determining cause of a tuberculous lesion?"

The period of greatest liability of joint and bone tuberculosis is during the first five years of life, but is rare during the first year. More than half occur before the twentieth year, but cases in the middle-

aged are not rarities, and even seniles are not immune. Demonstrable tuberculosis of the lung is rare in cases of bone and joint tuberculosis; where the lesion is supposedly primary active pulmonary tuberculosis seldom develops.

Statistics show that a large per cent of all cases are directly determined by injury. The sequence is not of necessity a consequence. A definite tendency must be shown. Many cases arise without record or sign of antecedent injury or joint disease.

One school of surgical thought holds that bone and joint tuberculosis is never primary, always secondary. The other, that while in most instances the disease is secondary, in some it is certainly primary, and in some cases injury is the direct determining cause of the disease. In such cases tubercle bacilli, but not tubercles, were in the part at the time of the accident or were carried there soon after it in the body fluids, coming from some distant and probably unrecognizable area of disease or having entered into the lymph and blood directly after ingestion, inhaling, or inoculation.

Vital resistance may be lowered generally or locally. In a slight injury trivial, transitory hyperæmia follows. Stasis occurs after more severe injuries. If blood contains bacteria, more will be brought to the part during hyperæmia, and many of them will pass into the perivascular tissues through ruptured vessels.

Bacteria passing into damaged tissues tend to remain, and thus become true menaces. During their prolonged stay — invited by traumatism — they batter down cellular resistance by means of bacterial poisons.

Tubercle bacilli act in the same way; they may enter the blood in many ways without producing disease at the port of entry. Latent lesions, tending to cure, may be made active by some other disease or injury or may from time to time give bacteria to the system. They may pass through the body without producing any microscopical lesion. They can live in the blood, the waxy or fatty material of the bacillus resisting phagocytic and digestive action. They have an affinity for special parts and tend to settle into them. An injury tends strongly to localize them; especially is this true of injury to certain bones. Slight injuries predispose more decidedly than severe ones. The hyperæmia is too limited to admit of the prompt arrival and accumulation of phagocytes and alexines which does occur after a more severe injury.

Quoting Bosanquet, Da Costa says: "In a case of tubercular arthritis, if the reality of the accident is proved, if from the time of the accident there continued to be some pain and stiffness in the part, and if the symptoms suggestive of tuberculosis arise at a period not over three months from the accident, we are justified in regarding the trauma as having been causal."

Traumatism is often a determining cause of bone and articular tuberculosis in other regions. This view is held by numbers of able and eminent

clinicians and should be recognized by all courts of law.

To deny the possibility of traumatic tuberculosis is to deny many of the truths of pathology and some of the plainest lessons of clinical surgery.

A. C. BACHMEYER.

**Williams, G.: Localization of Osteomyelitis, Especially in Adults.** *Brit. J. Surg.*, 1914, ii, 97.

By Surg., Gynec. & Obst.

The author reports five very interesting cases of osteomyelitis, four of which are adults. In three of the cases there was a recognizable primary source of infection. He draws the following conclusions:

These cases bear out the general idea that infection of bone is primarily one of the marrow; and, therefore, the medullary canal should be explored in all cases in which X-rays do not give evidence to the contrary.

In adults the localization of the infection is in the middle of the length of the shaft rather than at either end.

In adults the infective osteomyelitis may be so subacute in character as to suggest a sarcoma rather than an infection in its clinical features.

GEO. I. BAUMAN.

**Barrie, G.: Hæmorrhagic Osteomyelitis.** *Surg., Gynec. & Obst.*, 1914, xix, 42.

By Surg., Gynec. & Obst.

Further investigation and study confirm Barrie's earlier view that the generic term, hæmorrhagic osteomyelitis, conveys more exactly and precisely the clinical, macroscopic, and microscopic findings of those solitary intraosseous lesions in the long bones that have heretofore been diagnosed as medullary giant-cell sarcoma, myelogenous giant-cell sarcoma, myeloma, medullary giant-cell tumor, localized osteitis fibrosa, benign bone cyst, traumatic solitary bone cyst, etc.

He insists that the so-called medullary giant-cell sarcoma, occurring as a solitary lesion in the long bones, is in fact a localized regenerative inflammatory process, without any evidence of malignancy. The giant-cells present are foreign body giant-cells that perform the part of scavengers; they are not tissue builders. Going hand in hand with bone destruction from nutritional inhibition and pressure necrosis are seen efforts at repair in the formation of replacement hæmorrhagic granulation tissue.

The author formulates a simple classification, recognizing two distinct forms the chronic lesion assumes:

Type A. Chronic hæmorrhagic osteomyelitis.

Type B. Chronic fibrocystic osteomyelitis.

To type A belong the lesions that retain throughout their cycle the hæmorrhagic granulation tissue picture, giving practically no evidence of metaplastic change. To this group belong the so-called medullary giant-cell sarcoma, myelogenous giant-

cell sarcoma, myeloma, and medullary giant-cell tumor.

Type B is a secondary stage of the hæmorrhagic form. Here metaplasia has occurred; the granulation tissue has been converted into replacement or proliferative fibrous structure. With active metaplastic reaction there is retraction and cyst formation.

To this group belong the so-called benign bone cyst, traumatic solitary bone cyst, and localized osteitis fibrosa.

All of these lesions give a history of initial trauma; they are localized, and, so far as we know at present, are non-infective, and are non-suppurative.

**Smith, J. F.: Ostitis Fibrosa Cystica.** *Wis. M. J.*, 1914, xiii, 91.

By Surg., Gynec. & Obst.

The author cites various reports in the literature of bone cysts and benign tumors of bone, and also reports an interesting case of a woman, aged twenty years, who sought medical advice on account of an enlargement of the left side of the lower jaw of many years' duration. Two years previous she had had a premolar tooth drawn, the dentist evidently considering the trouble to be an alveolar abscess of dental origin. Inasmuch as the swelling persisted, the dentist attempted to remove some necrotic bone, supposed to be at the bottom of the fistula, which persisted after the tooth was drawn. This attempt was unsuccessful. When examined by the author the patient had a marked deformity of the face, due to the bulging of the left side of the lower jaw. Inside of the mouth a mass could be seen which involved the left side of the lower jaw, expanding the jaw both inward and outward. The mass was firm and smooth on palpation, no crackling or fluctuation being obtained. X-ray showed a large mass consisting of a central soft area surrounded by a thin shell of compact bone at the bottom of which a fully developed tooth could be seen.

Some of the tissue removed by operation was submitted for examination and was found to be mucoid connective tissue. Apparently there was inflammation, but there was no evidence of tumor formation; hence, the diagnosis was made of bone cyst of inflammatory origin.

C. M. JACOBS.

**Berry, J.: Clinical Notes on Malignant Tumors of Long Bones.** *Clin. J.*, 1914, xliii, 465.

By Surg., Gynec. & Obst.

Discussion of sarcoma of bone takes up a large part of the article, which is splendidly illustrated with photographic reproductions of the bone and tumor. Attention is called to the fact that pain may be very slight. Other conditions simulating tumors are cited, for example, the chronic forms of osteomyelitis with bone production in the periosteal region of the shaft. A mistaken diagnosis leading to amputation for this latter condition has come under the author's notice.

Sarcoma of the ends of the long bones leading to joint inflammation and simulating primary joint dis-



ease is not uncommon; with it, however, even after swelling of the joint and great pain, movement although restricted is not painful. Old ununited fracture with false joint and tumor-like formations of fibrous tissue may also be taken for tumors.

ALEX. R. COLVIN.

**Llewellyn, R. L. J., and Jones, A. B.: Osteo-Arthritis of the Hip; Diagnosis in Its Early or Pre-Osteophytic Stages.** *Lancet*, Lond., 1914, clxxxvii, 365. By Surg., Gynec. & Obst.

A strong plea is made for early diagnosis, which it is stated can be made long before the formation of osteophytes. Among the subjective symptoms are pain, local and referred, tenderness, and occasional associated lumbar pains. Painful stiffness in the joint first attracts attention. Pain in the early stage is attributed to incarceration of enlarged villi. It is therefore inconstant and may be located anteriorly or posteriorly, near the joint or about the great trochanter.

Local tenderness due to sensitiveness of the capsule is very important in the differentiation from the sciatica, etc., and may be elicited by deep pressure in the groin or behind the trochanter.

Referred pains, often present for years or decades before bone changes are disclosed by X-ray, are frequently mistaken for sciatic or rheumatic conditions. These pains may be referred along the distribution of the sciatic, the anterior crural, the obturator, or the external cutaneous nerves. Simultaneous pain along the anterior crural or obturator as well as along the sciatic is considered very distinctive.

Climatic conditions and barometric changes have little influence. The pain is dependent upon mechanical or static causes, and this opinion is strengthened by the fact that pain disappears when ankylosis is complete. The associated lumbar pains are differentiated from the sciatica and lumbago by the insidious onset and subacute character.

Among objective symptoms may be mentioned: (1) Initial temporary limp due to occasional pinching of villi; (2) change in attitude; (3) limitation of motion, the result of muscle spasm secondary to joint irritation.

The above are symptoms of what may be called the primary, or pre-osteophytic, stage with clinical manifestations corresponding to those of a villous arthritis.

Treatment in this early stage should be directed to the correction of abnormal strain arising from flat-foot, excessive weight, etc., combined with temporary fixation, active and passive motion, and hyperæmia.

F. J. GAENSEN.

**Brackett, E. G.: Arthritis Associated with Lesions of the Genito-Urinary Tract.** *Boston M. & S. J.*, 1914, clxxi, 63. By Surg., Gynec. & Obst.

In the increasing attention which is being given to the etiology of the arthritides, special consideration

is being taken of the portals of entry of infection and the special joint manifestations associated with various sources of toxæmia. It cannot be said that infections from given sources will always give characteristic joint symptoms, but there are some symptoms which will give a definite clue to the direction of the search.

The sources of infection may be conveniently divided into three groups: (1) bacteria or bacterial toxins; (2) chemical toxins—gastro-intestinal; (3) chemical irritants—uric and oxalic acids.

In the first group there is no source more prominent than the genito-urinary tract. The organism is either the gonococcus or the colon bacillus. Arthritis from gonococcus infection may be either acute or chronic. In the acute type, marked by sudden onset of pain, tenderness and swelling, usually non-articular, the organisms are sometimes found in the joint cavities, which seems to indicate that the inflammatory process is a bacterial one. Pathologically, the joint shows a greatly increased vascularity of the synovial membrane, capsular thickening, and finally destruction of the cartilage, obliteration of the joint cavity, and fibrous or incomplete bony ankylosis. In the chronic type the organisms are not found in the joint, the symptoms and pathologic changes, therefore, being due to the toxins and the process being a disturbance of nutrition rather than an inflammation. There is a history of repeated attacks with mild but persistent symptoms, polyarticular in distribution. The pathology is not so extensive as in the acute form, and ankylosis from destruction is rare.

Arthritis from the colon bacillus is polyarticular and most frequent in the spine but has no pathognomonic characteristics.

Methods of treatment have changed from symptomatic to etiologic in the course of the acceptance of the primary focus idea. In the acute cases early opening of the joint cavity and hot lavage, followed by complete closure, is good surgery. For the later cases with adhesions oil inflation is indicated. This should be done by open operation in order to dispose of adhesions already present.

W. A. CLARK.

**Hastings, T. W.: Complement-Fixation Tests in Chronic Infective Deforming Arthritis and Arthritis Deformans.** *J. Exp. Med.*, 1914, xx, 52. By Surg., Gynec. & Obst.

The author reports 17 cases of arthritis deformans which were positive to tests for streptococcus viridans antigen, thus proving their infectious nature. These cases constituted 39 per cent of the total number tested. A group of 26 control cases, not arthritis, were consistently negative to complement-fixation tests for streptococcus viridans. Thirty-five strains of streptococcus viridans obtained from tonsils, teeth, prostate, and blood were used as antigens. The experiments are reported in detail. Cultures of streptococcus and staphylococcus, from the tonsils, endometrium, and sputum gave no reaction with the patient's blood.

The conclusions are that streptococcus viridans excites the production of a complement-fixing substance in cases of arthritis deformans, and therefore it is the probable causative agent of the disease. Serum from one case may react positively to two organisms, as streptococcus viridans and gonococcus. In this case streptococcus viridans should be considered the causative agent since gonococcus infection is frequently latent in the genito-urinary tract and only rarely produces the clinical signs of arthritis deformans.

W. A. CLARK.

**Wolverton, W. C.: Acute Rheumatic Arthritis in Children.** *Merck's Arch.*, 1914, xvi, 205.

By Surg., Gynec. & Obst.

The writer emphasizes the necessity of being ever on the alert for the "mild" cases of acute rheumatic polyarthritis, as it is these cases, so easily overlooked, and consequently untreated, that result so disastrously as regards the heart. Vaccine treatment is being used with most satisfactory results.

A. J. DAVIDSON.

**Finch, E.: Internal Derangement of the Knee-Joint.** *Univ. M. Rec.*, 1914, vi, 111.

By Surg., Gynec. & Obst.

Finch gives a clear and concise description of the anatomy of the knee-joint, which he rightly thinks very necessary to the diagnosis of injuries to it. Sprains are due to wrenching and twisting. They cause great pain followed by effusion into the joint, and are best treated by absolute rest and compression bandages renewed daily. No splint should be used; active motion should be instituted at once, passive later.

Lacerated and ruptured lateral ligaments are severe injuries, causing the patient to fall to the ground. Immediate effusion means hæmorrhage. The treatment is the same as in sprains but is continued for a longer period; splints to prevent lateral motion are a help. Semilunar cartilage injury is nearly always to the internal and is done by lateral force with the leg partly flexed; the anterior end is crushed or torn loose, possibly displaced toward the center of the joint. The leg cannot be fully extended. Moving the leg back and forth often reduces the dislocation. When it becomes chronic, operation for removal is necessary. Convalescence is not lengthy. The author thinks if the acute cases were properly treated at rest for three weeks there would be fewer chronic ones. He does not believe in retentive apparatus or drainage after operation. In his cases the average time of returning to work was seven weeks. Loose bodies when free in the joint should be located under local anæsthesia, or at least located and fixed by local anæsthesia, before a general anæsthesia is given for removal, since the patient, if conscious, can aid greatly in determining the body's position. Rupture of the crucial ligaments follows violent accidents only and is diagnosed by the mobility of the joint. Rest and the use of a retentive apparatus for a long time give a fair result,

but some permanent disability is pretty certain to result. No movement should be allowed before two months.

Other derangements are: separation of the tibial tubercle; infrapatellar pads of fat, which, when caught between joint surfaces, should be excised; trigger-knee, in which a loud snapping is caused by a pedunculated foreign body which should be removed; surrounding tendons which get caught and slip over extoses; and finally, rarely, dislocation of the patella, the treatment of which is operative.

C. A. STONE.

**Gruber, G. B.: Further Study of the Pathological Anatomy of Circumscribed Ossification of Muscle; with Remarks on Myositis Ossificans** (Weitere Beiträge zur pathologischen anatomie der umschriebenen Muskelverknöcherung, nebst Bemerkungen zur Myositis ossificans überhaupt). *Mitt. a. d. Grenzgeb. d. Med. u. Chir.*, 1914, xxvii, 762. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author adds to the 7 cases of circumscribed ossification of muscle, previously described by him, 12 more; 6 of which were caused by trauma, 2 accompanied tabetic joint diseases, and 4 specimens showed large unilocular exostoses. From his histological examinations, which always showed injury encroaching upon the muscle-fibers with interstitial inflammation and formation of granulation tissue, from which anaplastic or metaplastic bone or cartilage was formed, Gruber concludes that ossification of the muscles is the result of an inflammatory process in the region of the muscle. Neither does he admit the periosteal origin of the large exostoses in his four specimens, which apparently proceed from the bone, but he thinks the muscle takes an active part in their formation, either alone, in the case of movable pieces of bone, or in conjunction with the irritated periosteum at its insertion into the bone.

He assumes the same mode of origin for the multiple progressive forms of myositis ossificans, as the histological findings are the same. He considers the progressive form a "metaplastic reorganization process," probably congenital or acquired defective organization, or a functional disturbance of the central nervous system. He explains the presence of muscle adhesions in all the cases as being analogous to other well-known processes of calcification; wherever young, vascular connective tissue comes in contact with calcium, bone is formed.

The first requirement is always present, as there is granulation tissue at the injured place in the muscle. The presence of calcium can be demonstrated in some cases by the sulphuric acid reaction; in others, with a high acid content of the muscle, it may be assumed. In other cases where no local collection of calcium can be demonstrated the calcium content of the blood and lymph is available, which is increased by the fact that there is increased destruction of bone, either from general nervous disease, as syringomyelia or tabes, or from the fact



that trauma has caused acute bone atrophy. The same explanation may hold in the progressive form, as it is generally formed in neuropathic or deformed subjects. The question of the disposition to ossification of bone is transformed into the question of the calcium salts available for reaction with the granulating connective tissue. He suggests the name "myopathia chronica osteoplastica" instead of myositis.

SIEVERS.

**MacDonald, T. L.: Contractured Psoas Parvus Tendons; Their Significance and Clinical Relationship to Lesions of the Right Iliac Region.** *Surg., Gynec. & Obst.*, 1914, xix, 215.

By Surg., Gynec. & Obst.

The author cites clinical cases to show the symptomatic resemblance to subacute and chronic appendicitis, and calls attention to the readiness with which the contractured tendon may appear to perpetuate post-operative distress in the right iliac region. He comments upon the unsuspecting attitude held concerning its existence and summarizes as follows:

1. The pre-operative flexion of the right thigh is so frequently a symptom of inflammation of the vermiform appendix that it seems to confirm this diagnosis.

2. In the case of moderate contracture complete thigh extension may be possible but painful. Restriction is definite.

3. In the suppurative cases of appendicitis the contractured tendon may readily be overlooked, because of the importance of terminating the operation at the earliest moment; of indulging in the least possible intra-abdominal manipulation; and because bowel and omental adhesions supervene.

4. It may not be significant, but in each case the psoas parvus tendon on the other side was examined and found normal, except in Case 2.

5. The cardboard-like edge of the shortened tendon is capable of damming — to a most troublesome degree — the cæcal current by forming a saddle-bag cæcum, as the gut rests upon it; the relief of constipation, after tenotomy, being quite noteworthy, even while the patient is lying in bed.

6. At present the stripping up of the peritoneum from the outer edge of the abdominal wound, as though to expose the ureter, seems a satisfactory and feasible method of exposing the tendon for tenotomy, when the abdomen is opened through the oblique incision.

7. Prompt relief of the symptoms may be expected after complete tenotomy.

8. In the post-operative cases the leaning attitude of the patient may well suggest adhesions.

9. The persistence of thigh flexion under anesthesia is characteristic.

10. All of these patients were inclined to be neurotic.

11. It now seems somewhat strange that in a hospital service of eighteen or more years similar cases have not been encountered before, which sug-

gests that it would be wise to examine for, and exclude, this lesion when operating in the lower abdomen.

12. The unsuspecting attitude of both medical attendants and surgeon is emphasized by the fact that the only instance in this short series wherein the contracture was even suggested before operation was in the last one seen.

## FRACTURES AND DISLOCATIONS

**Sherman, H. M., and Tait, D.: Fractures near Joints; Fractures into Joints.** *Surg., Gynec. & Obst.*, 1914, xix, 131.

By Surg., Gynec. & Obst.

The author points out that a fracture near a joint develops mechanical conditions, due to the short fragment and mobile joint, and that the restoration of the normal anatomy and physiology is thus made more difficult. Special attention is drawn to the fact that different surgeons have suggested certain positions in different fractures which restore most satisfactorily and maintain most accurately the alignment of the fragments, and that then function returns as a matter of course. These positions in all of these different joints have been found to be at the limit of normal motion and in the direction in which motion is most difficult and slow to regain after the older methods of dressing.

The fractures specialized are those at the upper end of the humerus, in which the position of choice is that of abduction, to make the major fragment follow the minor; at the lower end of the humerus, in which the position of choice is that of complete flexion; at the hip, in which the position of choice for non-impacted fractures is that of abduction; at the ankle, in which the position of choice is that of supination, with the foot at right angles to the leg on an anteroposterior plane. These are now adopted methods of treatment, and in all of them a position has been selected which is the last one to become possible after treatment by older plans; and in each of them it is pointed out that where the minor fragment is more firmly fixed by joint structures and other tissues to the segment of the limb beyond the joint than it is to the major fragment, it is mechanically and for purposes of therapy a part of the segment beyond the joint, and to control this minor fragment some position of the segment of the limb or of the whole limb must be found. The writer accepts this as a law for all juxta-articular fractures, and argues that what is true of one such fracture must be true of all when similar mechanical conditions are present, and that for fractures other than those instanced similar methods of treatment may be found. Certain of the juxta-articular fractures are associated with an intra-articular fracture, and for these also a positional method of treatment may be found.

The second part of the paper cites experimental work, to answer the question as to whether internal fixation methods can be used inside a joint as they are used outside, and whether screws and plates

can be tolerated inside a joint, and if it would be right therefore to put them there, even on the bearing surface of the joint. Dogs and cats were used for this work, and screws of steel, of plated steel, of brass, and, in some instances, small plates of annealed clock-spring, were put inside the knee-joint; sometimes along the side of the bone, but, usually directly on the bearing area of the articular surface of the femur.

The conclusions arrived at were that the trans-articular method is the only practical method which gives perfect access to certain joint fractures, and permits accurate reposition of the fragments; that it is a perfectly innocuous method; that there is a decided mechanical advantage in using intra-articular screws or plates to insure accurate maintenance of fragments; that these seem to be *per se* innocuous; that they excite no reaction different from that caused in any other connective tissue; that when properly countersunk, they are rapidly excluded from the joint-cavity by a layer of newly-formed fibrous tissue which grows up from the marrow spaces, and that under aseptic conditions they remain firmly imbedded; that they cause very little more reaction than the autoplasmic bone-peg; that even if not entirely countersunk, they may still be practical and innocuous, because the projecting portion cuts for itself a path in the cartilage of the opposite bone and that when this has been accomplished, normal function returns. This transarticular route is suggested as the method of choice in fractures traversing joint surfaces, or in displaced epiphyses, when anatomical apposition of the fragments cannot be maintained except by the use of some internal fixation apparatus.

**Hitzrot, J. M.: Fractures of the Upper End of the Humerus.** *N. Y. M. J.*, 1914, c, 265.

By Surg., Gynec. & Obst.

The writer analyzes 393 cases of fracture of the upper end of the humerus observed during the past ten years. Of these, 268 were through the surgical neck, 101 through the tuberosities, 4 through the anatomical neck associated with dislocation of the head, 2 through the surgical neck with dislocation, and 11 were fractures of the greater tuberosity; some of the latter were also associated with dislocation. Only 7 were observed in children, of which 3 were epiphyseal separations and 4 fractures of the surgical neck.

The mechanism of the various forms of fracture, the variety of displacement and the influence of the musculature are next discussed, also symptoms and diagnosis.

As to treatment, in the vast majority of cases abduction and external rotation of the lower fragment will suffice. When there is overriding some form of traction is advised as a preliminary. In children and robust adults an anæsthetic is advisable; while in older patients anæsthesia should be avoided when possible. When there is little or no displacement, fixation after reduction is accom-

plished by bandaging the arm to the side with or without a pad in the axilla. In others where greater external rotation and abduction are necessary, molded plaster splints are more suitable.

Open operation was resorted to in only 3 per cent, the indications being as follows:

1. Fractures with dislocation of the head. The head may be removed or, when possible, replaced and fastened to the shaft by a screw or nail.

2. Epiphyseal separations, unless absolutely accurate replacement is otherwise obtainable.

3. All fractures in which the reduction is imperfect and in which a bad result seems likely.

Local anæsthesia supplemented by gas and oxygen during the short period of painful manipulation was sufficient in most cases. Except in long oblique fractures no internal fixation is necessary, retention being easily maintained by abduction and external rotation and pressure upward to compel engagement of the fragments. The use of metal splints, internal or external, or of intramedullary splints is considered an absurdity. In the long oblique or spiral forms, absorbable sutures passed through drill holes insure sufficient fixation.

A good result cannot be claimed unless there is abduction of 90° external rotation permitting the hand to be placed on the seventh cervical spine, and internal rotation permitting contact of the back of the hand with the mid-lumbar region.

In the after-treatment the author lays stress on the early use of baking, massage, and active and passive motion, and expresses the belief that many poor results are due to lack of attention to these details.

F. J. GAENSLER.

**Freiberg, A. H.: Infraction of the Second Metatarsal Bone.** *Surg., Gynec. & Obst.*, 1914, xix, 191.

By Surg., Gynec. & Obst.

Six cases are reported in which the patients presented themselves because of pain at the metatarsophalangeal joint of the second toe. In these cases the X-ray examination showed that there had been an infraction of the distal end of the second metatarsal bone. In three of the cases there were loose bodies in the joint, and in two of these they had to be removed in order to give relief. No case was seen less than four weeks after the injury and in two cases there was no recollection of the injury. The trauma was always a slight one, occurring while playing tennis in three of the cases and caused merely by a false step.

These cases have probably often failed of recognition because of the similarity of the symptoms to those of the so-called "anterior flat-foot." Aside from the roöntgenogram, the diagnostic features are: the traumatic origin, thickening and marked tenderness of the second metatarsophalangeal joint; and grating on passive movement if loose bodies are present.

The treatment is purely mechanical save when loose bodies indicate arthrotomy for their removal, either because of their size or number. In one case



permanent relief without operation resulted, even though a loose body 2.0 mm. in diameter was present.

Not a little interest attaches to the mechanism which this injury to the foot causes. Under normal circumstances the second metatarsal bone is slightly longer than the first. In the presence of a diminished power of toe flexion, and especially of the great toe, it is apparent that forcible impact to the ball of the foot against the ground not sufficiently guarded by the flexor power of the toes will cause the distal end of the second metatarsal to bear the brunt of the blow.

The author thinks that in this may be found the explanation of the mechanism of this injury.

**Davies, W. T. F.: Treatment of Fractures.** *S. African M. Rec.*, 1914, xii, 283.

By Surg., Gynec. & Obst.

In a general way, Davies reviews his experience in the treatment of fractures.

He discusses the results of early-day treatment of fractures, showing that perfect cures were never to be expected, that it was then almost impossible to get proper relationship between the articular surfaces of a joint.

He emphasizes the importance of perfect reduction, without which the successful treatment of fractures cannot be attained, and also states that great difficulty is to be encountered in securing perfect coaptation.

One of the principal sources of the revelation of the faults in the treatment of fractures has been the X-ray. Even after apparent successful reduction and the part looks perfect, the X-ray may show that there is no reduction whatever.

For the sake of the patient and the protection of the surgeon the author advocates the use of the X-ray, together with postero-anterior and lateral view photographs.

The great difficulty in getting reduction is due to the slight bowing of the muscles and tendons caused by the inflammatory exudation. The muscles in the normal state being stretched in straight lines along the bone axis, any undue pulling in trying to get relaxation only results in tearing.

This condition is not to be found in a compound fracture or in a recent fracture when cut down upon; both conditions may be reduced with comparative ease.

In nearly all cases general anæsthesia should be employed, that the surgeon may do his work thoroughly and without haste.

Perfect coaptation, the bone lines being placed exactly together with no rotation of one fragment on the other, must be secured.

In a compound fracture with sepsis, Davies advocates the opening of the wound, cleansing with some antiseptic, and the placing of a wire tightly around the fragments—no plates or screws being used.

In a compound comminuted fracture all fragments, if possible, should be saved and fitted together, the parts being held together with wire. Free drainage is necessary. An iodoform gauze drain saturated with pure glycerine may be used, the gauze being passed through a tube; or the gauze may be used as a packing. The glycerine has the effect of bringing about early asepsis.

In oblique fractures, Pott's and Colle's fractures, fractures of the patella and olecranon, T-shaped fractures of the knee and elbow, reduction is often impossible without operation; and in keeping the fragments in place, plates, screws, and wire should be used.

There should be no fear of operating on these cases. If properly done, results will be successful, but if operative procedure is not attempted in cases where reduction cannot be accomplished in any other way, deformity is sure to result.

JOHN H. SHAW.

**Woolsey, G.: Conservatism in the Operative Treatment of Simple Fractures.** *N. Y. St. J. Med.*, 1914, xiv, 409.

By Surg., Gynec. & Obst.

The use of any old or new operative method of treatment which best meets the indications, when operative treatment is decided to be necessary or advisable and safe, is the author's idea of conservatism in operative treatment of simple fractures.

He recognizes that good function is much more important than the position of the fragments, and that it may be obtained when the position is by no means perfect, and that it may not be present when the position is nearly perfect, although it is most likely to be.

The first essential to conservatism in the operative treatment of fractures is a careful clinical diagnosis verified or corrected by anteroposterior and lateral X-ray views, whenever it is possible. If the fragments are not in good position, reduction must be attempted and the result shown by another X-ray. This attempt at reduction must be made early—during the first four or five days if possible.

The operative treatment of fractures is undertaken to better fulfill two fundamental requirements of fractures,—reduction and retention.

Reduction is the most important feature and is common to all methods of open treatment. If there is overriding it should be overcome by traction, etc.

For the retention of bone fragments there is now a large armamentarium for the operative treatment of fractures by plates and similar methods.

The chief objections to the use of metal-plates are (1) that it changes a simple into a compound fracture for the time being, as do almost all operative methods of treatment; (2) that it leaves a foreign body in the tissues. Metal-plates are better formed with less danger of causing trouble when applied to bones like the femur, which are well covered by muscles, rather than to bones covered only by skin, like the tibia. Other objections to metal-plates are that they cause osteoporosity of the bone and delay in callous

formation and ossification; hence, delayed or non-union has not infrequently resulted.

These objections and that of leaving a foreign body in the tissues are met by the use of bone-plates, usually taken from the crest of the tibia. In fractures of the tibia a V-shaped groove is cut on the inner surface with a Hartley saw. Into this a bone-plate, four inches long, triangular on sections cut from the crest, cut from the same or opposite tibia, is fastened by chromic gut passed through drill holes above and below the fracture. This seems to stimulate rather than retard repair, hence is useful in delayed union. It is not so often suitable for the femur.

The author has had no experience with the intramedullary dowel of bone. In some cases he believes that a nail or a screw meets the indications more simply and more effectively than a plate or anything else.

C. M. JACOBS.

**Corner, E. M.: Some Practical Notes on Dislocations of the Hip.** *Practitioner*, Lond., 1914, xciii, 184.

By Surg., Gynec. & Obst.

Corner bases his observations on the cases of dislocation of the hip which have come to St. Thomas' Hospital, London, since 1890. He considers the usual textbook classification as too elaborate, dividing the cases into two varieties, either posterior or anterior to a line drawn through the center of the acetabulum and anterior inferior spine. He bases his diagnosis on the position of the limb, the position of the great trochanter, position of the head of the femur, and the skiagraph. The relative frequency of posterior to anterior dislocations is about 7 to 1. The necessary causative factor is violence to a body supported by an abducted leg. It is much more frequent in males than in females and occurs most frequently during the second decade. He details the manipulations necessary to obtain reduction in the two varieties.

H. W. WILCOX.

**Greig, D. M.: Recurrent Luxation of the Patella.** *Edinb. M. J.*, 1914, xiii, 46.

By Surg., Gynec. & Obst.

True traumatic dislocations of the patella are uncommon and, when they do occur, are of minor importance to other coincident injuries.

The author has considered conditions characterized by outward displacement of one or both patellæ and their etiology.

The patella being a sesamoid bone and developed within the tendon of the quadriceps extensor crurens, is modified to articulate with the trochlear surface of the condyles of the femur. The outer condyle is prolonged further upward and is flatter, all of which facilitates outward displacement; but in complete flexion the inner condyle projects further downward. The patella is held in place by the capsule and tension of the quadriceps, but in effusion, the tension being increased, displacement rarely occurs.

Abnormal or irregular conformation of a knee-joint, with lax ligaments — which is considered a negligible factor — admits of a greater range of motion, hence greater liability to displacement; and variations in the axis of the femur or of the constituent muscles of the quadriceps extensor renders the patella more liable to be misplaced. Young adults are more subject to displacements and they often follow some exanthematous diseases, such as diphtheria, scarlet fever, and anterior poliomyelitis.

The most prominent factors are traumatism, defective bone development, and imperfect muscular action due to cerebral and spinal affections. The treatment advised is rest in bed and splints in the recurrent type, surgical correction of abnormal bone development, and limited exercise with a protecting leather knee-cap.

H. W. MALTBY.

### SURGERY OF THE BONES, JOINTS, ETC.

**Pringle, J. H.: Analysis of Two Hundred and Thirty Cases of Open Fractures of the Long Bones Treated by Operative Methods.** *Brit. J. Surg.*, 1914, ii, 102.

By Surg., Gynec. & Obst.

The author reviews the results of 230 cases of open fracture of the long bones treated by operative methods. He divides the cases into those treated by fixation — by wiring, plates, screws, etc. — and those treated by simple cleansing. Secondary amputation was necessary in 6.25 per cent of the fixation and 14.8 per cent of the cleaned cases. Most of the cases were treated by fixation, and he considers the results obtained very satisfactory. On account of the free opening up of the wound that is necessary for fixation, sepsis was much less common than in the cases treated by simple cleansing and external fixation.

GEO. I. BAUMAN.

**Vulpinus, O.: Operative Mobilization of Joints** (Beiträge zur operativen Gelenkmobilisierung). *München. med. Wchnschr.*, 1914, lxi, 596.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author recommends the bilateral incision and the interposition of flaps of fascia with pedicles for the mobilization of the knee-joint. The best cases are those of post-traumatic ankylosis of the elbow-joint. He does not hesitate even to undertake the mobilization of the joint in closed tuberculosis, and gives a detailed description of three successful cases of operation as follows:

1. In a case of ankylosis of the elbow-joint in a 10-year-old boy after fracture of the joint the interposition of a flap from the triceps tendon resulted 4 months later in active extension to 160 degrees, active flexion to 50 degrees.

2. A 38-year-old woman had had tubercular ankylosis of the hip-joint for 25 years. A new joint cavity was made and fatty tissue and a layer of the gluteus interposed. Six and one-half years after the operation the patient could walk without pain; complete flexion and extension to 50 degrees was possible.



3. The third case was that of a 26-year-old woman with bilateral ankylosis of the hip after septic rheumatism of the joint. Operation was performed on both joints within four weeks. Fascia and muscle were interposed. The findings one year later were: On the left, active flexion to 80 degrees, abduction to 20, adduction to 10; on the right, active flexion to 80, abduction and adduction to 40, from the midline. The patient can sit and kneel, and can walk for two hours with a cane. Vulpius has performed the same operation repeatedly with good results in arthritis deformans, and has been able to stop the pain and restore the function.

WEBER.

**Devine, H. B.: Free Fat and Fascia Transplantation in the Treatment of Ankylosed Joints and Diseases of Bones.** *M. J. Austral.*, 1914, i, 123.

By Surg., Gynec. & Obst.

Seven out of eight transplants of fat into bone performed on animals in Garre's clinic are reported to have been successful — one case healing perfectly in the presence of mild inflammation. This positive result in a case of infection offers the hope that fat may be used for filling in bone cavities in osteomyelitis, where it would serve as a framework for redevelopment of bone. Two such cases are reported: one in the temporomaxillary joint, and one in the femur, with healing by first intention.

The technique is as follows: All infected sinuses are dissected out without opening. The infected wall of bone is burred through clean bone, sterilized with pure carbolic acid, and washed out. After all gloves and instruments have been changed, another burring is done, and the cavity rewashed and dried. The transplanted fat must not be touched with the fingers, and must fill the cavity completely. Other uses for which the fat transplant has been successfully employed by the author are separation of the brachial plexus from the sharp edge of a deformed first rib; filling in the cavity of a central hydatid of the liver; isolating the ulnar nerve from scar tissue of a fracture of the humerus. The most valuable use of such transplants is in treatment of ankylosed joints. The free transplant has the advantage over the pedicle flap, in that it can be made as large as necessary and it allows free manipulation.

An ankylosed shoulder of eight years' standing was mobilized by completely enclosing the head of the humerus in a layer of fascia lata with fat after an unsuccessful operation with a pedicle flap. Other cases reported are mobilization of the hip-joint, which had been ankylosed following an arthritis by enclosing the head of the femur in a free fat transplant, and a case of double ankylosis of the temporomaxillary joints. In this latter case, as the patient was unable to open his mouth wide enough to take food, extraction of the incisors was necessary. The complete bony ankylosis was chiseled loose, and a piece of fascia lata, doubled, with fat inside, was interposed. Three months later the patient had almost perfect motion of the jaw.

W. A. CLARK.

**Essers, E.: Operative Treatment of Paralysis of the Shoulder** (Ein Beitrag zur operativen Behandlung der Schulterlähmung). *Ztschr. f. orthop. Chir.*, 1914, xxxiv, 479.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

After a short discussion of the disturbances in motion of the shoulder-joint, Essers describes a case of trapezius paralysis from the Lange clinic and discusses the pathology and treatment of the condition. It is generally caused by injury to the accessory, for instance, in the removal of cervical glands, but the clinical picture of complete paralysis of the trapezius may vary. It may be possible to elevate the arm laterally above the horizontal, because of the vicarious action of other shoulder muscles, although the force is decreased. But the sinking of the shoulder forward and downward is characteristic, as well as the standing out of the scapula from the spinal column and incoördinated excursions of the scapula on lateral movements of the arm. These phenomena are caused by shortening of the serratus and the pectoralis, and a lengthening of the excursion of the acromioclavicular joint backward and inward as a result of the lack of the action of the trapezius.

The author speaks of the operative and non-operative treatments of paralysis of the shoulder-joint, none of which have given uniformly satisfactory results. Rothschild's method is an advance in the treatment; he fixed the scapula to the spine with a strip of fascia. In a similar way, in a case of congenital bilateral absence of the trapezius, Cramer fastened the scapulæ together and to the spine. In a series of interesting cases of paralysis of the trapezius in syringomyelia, Lange, instead of the strip of fascia, used a strong silk suture, which he carried obliquely upward from the median angle of the scapula through the subcutaneous fatty tissue and fastened to the spinous processes in the region of the lower cervical vertebræ. The functional result was very good. The scapula was held in normal position, the overstretched rhomboidei and levator scapulæ were relieved, and after a suitable orthopedic after-treatment the arm could be lifted to the perpendicular.

DUNCKER.

**Vulpius, O.: Lengthening of Tendons by "Sliding"** (Über die Sehnenverlängerung durch das "Rutschenlassen"). *München. med. Wchnschr.*, 1914, lxi, 710.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The simplest method of tendon lengthening; subcutaneous transverse section, does not give good anatomical and functional results, and the plastic lengthening of tendons, whether performed by the open or subcutaneous method, injures the tendon to a very considerable extent; therefore Vulpius recommends a method which he calls "sliding" of the tendon. The tendon is cut high up where it enters the muscle and so has muscle-fibers on each side of it. The incision is made obliquely or in the form of a reversed V, with the apex directed toward the center. When let loose the peripheral part of

the tendon slides downward without interrupting the continuity of the tract. The greatest indication for this method is found in paralytic and spastic contractures, as well as in ischemic contractures, where there will be abundant opportunity to test it. GLAESSNER.

**Moore, J. W.: Surgical Treatment of Infantile Paralysis.** *N. Y. M. J.*, 1914, c, 404.  
By Surg., Gynec. & Obst.

A short description of infantile paralysis is given, followed by a discussion of the various methods of treatment of the fourth, or stage of residual paralysis, and a report of cases of tendon transplantation and arthrodesis.

Many of the methods which have been used are mentioned, such as screw fixation of joints after Magruder, silk ligaments, and muscle transplantation. Any operation involving the use of the tendons of paralyzed muscles is condemned.

Eight interesting cases are described including operations on a hip, a shoulder, and ankles.

F. C. KIDNER.

**Binnie, J. F.: Amputations of the Leg.** *Ann. Surg., Phila.*, 1914, lx, 160. By Surg., Gynec. & Obst.

The essayist states that the choice of method and site of leg amputations, below the knee, depends first on the lesion for which the operation is required, and, second, on the use which is to be made of the stump.

He then discusses the first point in malignant disease and gangrene, describing the method of Moskowicz and that of Sandrock to determine the line of demarcation. Second, the use which is to be made of the stump is a factor of prime importance in the choice of the site of amputation. If an artificial limb cannot be secured it is of great importance to save as much of the limb as possible and to provide a stump upon which the weight of the body can be supported without harm resulting. An example of such an operation, where the foot only is amputated, is the osteoplastic procedure of Pirogoff, the heel being partly saved.

He discusses the "seat of election" for amputations of the leg, the stump being sufficiently long to attach an inexpensive wooden peg. Where the patient can afford a good artificial limb, the lowest favorable site for section of the leg bones is eight inches above the ground, and the highest point four inches below the lower edge of the patella.

If necessary to amputate above the "seat of election," disarticulation at the knee has usually been advised. Efficient weight-bearing capacity may be impaired by adhesions of skin, etc., to bone; inefficient covering of the bone; irregularity of the end of the bone; stump neuromata; and nerve-endings caught in scar tissues.

In discussing means besides asepsis to avoid these faults, he describes the method of section of the various tissues from skin to bone, the stripping up of the periosteum and the scraping out of bone-

marrow for one-third of an inch, thus favoring painless stumps. He approves of the subjecting of the stump to a reasonable amount of "therapeutic abuse" and describes Hirsch's method of accomplishing this. He also describes his own modification of the Bier osteoplastic operation. H. W. WILCOX.

## ORTHOPEDICS IN GENERAL

**Neuhof, H., and Oppenheimer, E. D.: Congenital Contractures of the Fingers; with the Report of a Case of the Familial Type.** *Surg., Gynec. & Obst.*, 1914, xix, 193.

By Surg., Gynec. & Obst.

A case of bilateral contracture of the fingers running through three generations, is described. The fourth and fifth fingers of the right hand were operated upon. It was then found that the resistance to extension was not in the skin, fascia, or tendons, but in the joint capsule and articular ligaments. The authors believe that most of the failures in the operations for congenital finger contractures are due to non-recognition of this factor. In their case full extension of the fingers was obtained after partial division of the capsule and ligaments. The operative findings are described in detail. A simple apparatus to maintain extension was devised, and employed for several weeks. The final result was excellent, and the authors believe results should generally be successful if their plan for operation were carried out.

Three stages of congenital finger contracture are recognized. In children the "dropping" of the phalanges can be permanently corrected by extension apparatus. The second stage, generally observed near puberty, consists in a contracture that can be overcome without operation only with great difficulty. In the third stage the affection has progressed and can be cured only by operation. The contracture not infrequently remains stationary in the first stage. Dupuytren's contraction of the fascia bears no relation to congenital finger contracture.

**Fraser, F. R.: Clinical Observations on Ninety Cases of Acute Epidemic Poliomyelitis.** *Am. J. M. Sc.*, 1914, cxlviii, 1.

By Surg., Gynec. & Obst.

In a study of ninety cases of poliomyelitis admitted in the acute stage to the Rockefeller Institute, the author observed that the ages were from nine months to fourteen years, that the preparalytic and general symptoms, such as feverishness, drowsiness, twitchings, and irritability, came on from a few hours to nine days before the paralysis, that vomiting occurred in about 50 per cent and opisthotonos in 80 per cent, but convulsions occurred in only one case. Tenderness on handling was noted in 67 per cent of the cases. Paralysis of the respiratory muscles was present in 33 per cent, and in 11 of the 12 fatal cases, death was attributed directly or indirectly to this cause. About 33 per cent showed



involvement of the facial muscles. Five cases of the abortive type are reported, in which there was present all the characteristic symptoms except paralysis. Electrical tests made on 11 patients seemed to indicate that paralyzed muscles which respond well to faradic stimulation will recover. After a year of unsuccessful treatment, recovery of a completely paralyzed muscle cannot be expected. Treatment during the acute stage may include the administration of urotropine and intraspinal injection of adrenalin. Neither of these measures was found to be of definite value. Artificial respiration in cases of paralysis of the diaphragm and inter-

costal musculature has not accomplished any recoveries. Care should be taken to make the patient comfortable and to prevent toe-drop by supporting the foot on a right-angle splint. After the acute stage the important points in treatment are massage and prevention of deformity. It is doubtful whether electricity is of any value beyond causing contraction; it may supplement massage but cannot replace it. The occurrence of deformities is to be prevented by resisting the relatively strong muscles with mechanical appliances, thus allowing the weaker muscles to relax, which condition hastens their recovery.

W. A. CLARK.

## SURGERY OF THE SPINAL COLUMN AND CORD

**Jacobs, C. M.: Bone Transplantation into the Spinous Process of the Vertebrae for the Cure of Tuberculous Spine Disease.** *Illinois M. J.*, 1914, xxvi, 118.  
By Surg., Gynec. & Obst.

The writer reports nine cases of Pott's disease treated by the Albee method of transplanting a splint from the crest of the tibia into the split posterior spinous processes.

While recognizing that this procedure marks a new epoch in the treatment of tuberculous disease of the spine the author does not think it justifiable in all cases and sums up the indications as follows:

In children with caries of the cervical, lower dorsal, and lumbar vertebrae, conservative treatment should be the first resort; in middle and upper dorsal

Pott's disease, or where conservative treatment has been tried with disappointing results, Albee's surgical method is the treatment par excellence.

In adults, where time plays an important part and where rapid results are desired, surgical treatment is the method of selection.

To avoid failure the graft should include the spinous processes of all of the diseased vertebrae and at least two contiguous vertebrae above and below. A good skiagraph is, therefore, most essential. External support is advisable for 6 to 12 months following the post-operative period of recumbency, as too early reliance cannot be placed on the strength of the graft, and it is best to give ample time for complete union.

F. J. GAENSLER.

## SURGERY OF THE NERVOUS SYSTEM

**Gerulanos, M.: Gunshot Injuries of the Peripheral Nerves in the Balkan Wars** (Schussverletzungen der peripheren Nerven aus den Balkankriegen). *Beitr. z. klin. Chir.*, 1914, xci, 222.  
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Of 2,522 wounded men received at the Idadie Hospital in Saloniki direct from the battle-field, 36 had nerve injuries and 50 had vessel injuries. Gerulanos operated in Saloniki and Athens together on 50 nerve injuries; he also had 18 cases that were not operated on. The region of the bend of the elbow is especially frequently involved; then follow injuries of the nerves of the upper arm. The sciatic nerve is seldom injured. The supraclavicular region is more often injured on the left side, the axillary and upper arm region on the right. In comparison with the vessels the peripheral nerves were seldom injured, probably because they yield to the bullets.

In spite of the great number of shrapnel injuries, especially in the second war, he saw only ten cases of injury of the nerves by shrapnel. The shot may pass through the nerve without injuring it particularly. The nerve may be torn or contused by the shot, or injured secondarily by aneurisms, bone

fractures, or pressure from scars. Injury to the nerve in conjunction with aneurism or other injury to the vessels is very frequently observed in the lower plexus. The nerve may be very severely injured by a growing aneurism. Other disturbances may be caused by blood or lymph effusion, by infectious inflammation, or by a foreign body. Even the simplest effusion of fresh blood or serous fluid into the tissues may interrupt nerve conduction.

Pathological-anatomical findings as well as the clinical signs of nerve injury are discussed. Operation should be performed if there is no improvement after 4 to 6 weeks. Resection of the nerve should be thorough, and carried out under the strictest asepsis. The operations are reunion of the divided ends of the nerve, stretching, plastic operations, substitution of catgut, lateral implantation, etc. The results of the operation were: 9 cured, 14 markedly improved, and 2 unaffected. When freed from adhesions, the nerve functions again in 2 to 3 months; when it is sutured, after 6 to 8 months. A third case recovered without operation.

Sixty-eight case histories are given.

GEORG SCHMIDT.

**Borchard: Surgery of Peripheral Nerves** (Prinzipielles zur Chirurgie der peripheren Nerven). *Beitr. z. klin. Chir.*, 1914, xci, 634.  
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Borchard reports the treatment of injuries of the peripheral nerves, which he has practiced for 15 years. As to the time for surgical interference, in subcutaneous injuries of the nerves unaccompanied by fracture, he operates when the signs of injury to the soft parts, chiefly effusion of blood, have disappeared, and when during this time there has been no improvement in motility — improvement in sensation does not have much significance — and when neuralgic symptoms or pronounced reaction of degeneration appears.

Often on operation it is found that there has been no interruption of continuity of the nerve, but the nerve-sheath is somewhat swollen and filled with small extravasations of blood and lymph, and the nerve itself injected and reddened. The nerve-sheath is always incised, even when palpation shows no marked change. Later it is sutured again and to avoid adhesions the nerve is embedded in muscle. If the nerve injury is complicated by a bone fracture, he generally waits for consolidation. If there is an open wound and it is aseptic, the nerve is immediate-

ly cared for; if it is septic he waits for the cleansing of the wound. In secondary nerve lesions from callus, scars, sequestra, etc., he operates on the first certain signs of beginning injury.

As to the technique of nerve operations, he demands that normal nerve tissues should be brought into contact, and that the nerve be freed from pressure and protected from later pressure from scars. The freshening of the nerve-stump must be carried back until nerve-fibrils can be detected. Often longitudinal incisions must be added to transverse resection, in order to free the nerve from the surrounding scar. Defects from cicatricial resections are to be compensated for, not by stretching, but rather by flexion of the neighboring joints and by bone resections. The best of the plastic methods is the implantation of both stumps into a sound nerve. It is very important to embed the place of suture to avoid pressure from the scar. Borchard prefers two muscle-flaps made from two neighboring muscles, with pedicles so that their nutrition and innervation is not interfered with. They are wound about the nerve in such a way that the injured surface is turned away from the nerve.

In the after-treatment the avoidance of contractures must not be neglected. WREDE.

## MISCELLANEOUS

### CLINICAL ENTITIES — TUMORS, ULCERS, ABSCESES, ETC.

**Koenigsfeld, H.: Attempts at Immunization against Mouse Cancer** (Über Versuche zur Immunisierung gegen Mausekrebs). *Zentralbl. f. Bakteriolog., Parasitenk. u. Infektionskr.*, 1914, lxxiii, 316.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The tumors to be used for immunization were prepared by the method recommended by Pohl and Wiechowski. They were crushed on a sterile glass plate with a spatula, and the plate dried either in a vacuum or at room temperature. After 24 hours the mass was scraped off, the fine tumor powder dissolved in sterile salt solution and used for immunization. Increasing doses were injected into mice, and protection was always produced against a succeeding inoculation with completely virulent tumors. This protection extended over several weeks, and caused at least an inhibition of growth of the tumor as compared with those in control animals, lengthened the life of the animals vaccinated, and often caused retrogression in tumors. Control experiments showed that normal organs prepared in the same way caused no protection against inoculation with tumors. C. LEWIN.

**Crile, G. W.: The Two-Stage Operation, Especially in Its Relation to Treatment of Cancer.** *Ann. Surg.*, Phila., 1914, lx, 57. By Surg., Gynec. & Obst.

Crile stresses the importance of availing ourselves of the recent developments in surgical technique

through which the margin of safety of the patient may be raised. Patients exhausted by cancer and acute infections should be "anociated" and given the benefit of the two-stage operation.

The patient who has been previously anociated has not the same fear of operation, nor has his vitality been lowered; besides his ability to stand further operation is raised.

Crile discusses methods adopted by him in cases of cancer of the rectum, stomach, cervix, larynx, tongue, and acute abdominal infections.

The mortality in cases of cancer of the rectum is lowered by a previous colostomy. Crile reports 16 cases without a death.

In cancer of the stomach a preliminary gastroenterostomy followed by resection in two weeks is advocated. In cancer of the cervix, at the preliminary operation, Crile advocates extensive cauterization to prevent implantation by the cutting method. The following day an abdominal hysterectomy is performed.

In cancer of the larynx, at the first stage, the deep planes of the neck are exposed and packed with iodoform gauze, to prevent mediastinal infection, and the vagus on one side is exposed, and its environs packed with gauze to prevent vagitis. At the second operation the larynx is excised. Twenty-eight cases have been performed in two stages with but a single death.

In cancer of the tongue the danger of pneumonia and infection of the neck are lessened by preliminary



cauterization of the growth and a secondary excision of all of the glands of the neck, whether they are enlarged or not.

In acute pelvic abscesses preliminary vaginal puncture is advocated in acute appendicitis, with a strongly walled-off abscess, simple drainage is the method adopted unless the appendix is easily located; drainage of the gall-bladder, in critical cases of acute cholecystitis, the cholecystectomy being reserved for the time "when the storm has passed."

In exophthalmic goiter ligation is performed in bed.

ISIDORE COHN.

**Powers, C. A.: Systemic Blastomycosis.** *Ann. Surg., Phila.*, 1914, lx, 815. By Surg., Gynec. & Obst.

Powers reports two fatal cases of systemic blastomycosis. The author wishes to emphasize (1) the fatal character of the disease, and (2) the necessity of early wide excision of the local focus. He credits Busse, 1894, with having first made detailed observation of the disease.

The infection usually enters by way of the skin, and is transmitted through the lymph-channels. The course of the disease is usually slow; anæmia, progressive emaciation, simple mycosis, and albuminuria, characterize the disease.

The first case, a male, aged 42, with a previous history of pneumonia at 19, was, at the age of 23, afflicted with a bronchial cough, lasting one year. At 32 he noticed two lumps, one above each clavicle; they gradually enlarged and were removed 15 months later. The sinuses healed slowly. Similar lumps appeared and were removed in 1902 and 1903. In 1906 he had an attack of jaundice lasting three months. In 1910-11 more lumps appeared below the jaw on either side. In June, 1911, Powers saw the patient. At that time the neck was filled on both sides with multiple hard lumps, presenting multiple sinuses. Radical operation on both sides was performed. The clinical diagnosis was tuberculosis. No histological examination was made. Two weeks later soft lumps appeared on the abdomen and thighs and were excised. In 1911 cultures from one of these abscesses gave pure blastomycosis. The patient died from exhaustion April 20, 1912.

The autopsy showed multiple miliary abscesses of the liver, iliopsoas abscess of the spleen, miliary abscesses of the pelvis of the left kidney — acute fibrinous pleurisy.

The lesions found, macroscopically, are everywhere essentially alike, the differences being apparently due in part to the stage of development of the individual lesion. The main features of the disease process can be reconstructed in considerable detail.

The organism lodges first in a small vessel or capillary. The endothelial cells proliferate, becoming larger and plumper, and separate from the wall. Later they may fuse about the organism to form a typical giant-cell of the Langhan's type. The vessel is occluded and the vessel wall disappears, leaving a collection of endothelial cells. This

collection enlarges, encroaching on the surrounding parenchyma, which disappears, leaving a supporting connective-tissue stroma and capsule. The connective tissue also increases to some extent and may organize the lesion, replacing it by scar tissue. In the earlier stages of the lesion there is more or less infiltration by leucocytes, among which plasma-cells and eosinophilic myelocytes are a striking feature, which serves at once to distinguish the process from tuberculosis. Somewhat later the cells of the lesion undergo a widespread and uniform coagulation necrosis, similar to the type commonly met with in rapidly growing malignant tumors, and differing from caseation in the fact that the structure of the cells can be recognized for some time after necrosis has taken place. Lesions as large as 1 to 2 cm. in diameter may consist of a capsule surrounded by a narrow zone of leucocytes and small daughter lesions and containing a pasty mass of necrotic cells with little or no living tissue. Ultimately the dead tissue is extensively infiltrated by polymorphonuclear neutrophils, the disintegration of which, with the resulting liberation of proteolytic ferments, is doubtless responsible for the liquefaction which occurs.

ISIDORE COHN.

**Okintschitz, L.: Reciprocal Relations of Some Glands with Internal Secretion** (Über die gegenseitigen Beziehungen einiger Drüsen mit innerer Sekretion). *Arch. f. Gynäk.*, 1914, cii, 333.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author has tested the effect of hormones, clinically and experimentally. Young rabbits, those two months old and older ones that had given birth to young were castrated; some of them were then kept as control animals and the others injected with extracts of various organs—biovar and ovariin, the secretory product of the whole ovary; proprovar, that of the follicular apparatus alone; luteovar, that of the corpus luteum; chorionin, that of the placenta; and mammin, that of the mammary gland.

The following were the effects of the extracts injected: Atrophy of the uterus was caused by castration in the young, as well as in the sexually mature animals; this was overcome by biovar, ovariin, and proprovar; it was not affected by luteovar; was even more decidedly affected by chorionin, but was seemingly increased by mammin. There is an increase of colloid in the thyroid gland after castration, probably less from increased glandular activity than from delay in the discharge of blood and lymph; this was decreased by proprovar, not affected by luteovar, but mammin caused increased glandular function and increase of colloid. Both microscopical and macroscopical changes in the adrenals were inconstant. In the hypophysis there was no effect on the posterior lobe. In the anterior lobe there are normally the most eosinophiles, then basophiles, and, last, basal or chief cells. The chief cells were increased by castration; on the injection of chorionin there was a

marked increase in the eosinophile cells, not as would have been expected in the chief or pregnancy cells.

From his experiments the author concludes that the ovarian hormones are produced by the follicular apparatus, not by the corpus luteum, and, for the most part, by the membrana granulosa. Moreover, the products of secretion of the follicular apparatus act in conjunction with those of the uterus; they act antagonistically with chorionin with reference to the thyroid; as to the anterior lobe of the hypophysis, the chief cells are synergists, the eosinophile cells antagonists of the follicular apparatus. He thinks the corpus luteum is a gland with negative internal secretion; it neutralizes toxins circulating in the organism. The results of his experiments confirm his clinical hypotheses; viz., that diseases due to hypofunction of the ovary, such as amenorrhœa, infantilism, and sterility, can be successfully treated with proprovar; those caused by hyperfunction of the ovary, as menorrhagia and osteomalacia, with luteovar, and also those caused by hypofunction of the corpus luteum, such as the pernicious vomiting of pregnancy, toxicoses of pregnancy, and eclampsia. MONHEIM.

**Cooke, A. B.: The Prevention of Surgical Shock and Post-Operative Pain.** *J. Am. M. Ass.*, 1914, lxii, 1777. By Surg., Gynec. & Obst.

Cooke states that it is the consensus of opinion among both clinicians and laboratory workers that the loss of vasomotor control resulting in the reduction of the blood-pressure below safe limits is the chief factor in the production of shock. The question then arises, How may a surgical operation be performed so as to cause the least possible disturbance of the vasomotor function? The answer is, Anoci-association as worked out by Crile. Crile advocates complete hæmostasis, dexterity, and gentleness.

The principles of anoci-association are:

1. The preliminary administration of one-sixth grain of scopolamine and one one hundred and fiftieth grain of scopolamine one and one-half hours before operation.
2. The use of nitrous oxide and oxygen for general anæsthesia.
3. The complete blocking of the operative field by the infiltration of a solution of 0.25 per cent novocaine.
4. The infiltration of all tissues traumatized which are supplied with sensory nerves with a 0.25 to 0.5 per cent solution of quinine and urea hydrochloride.

Cooke advocates a fifth principle, namely, early opening of the bowels with calomel, 0.5 grain in 6 doses, followed by a purgative enema on the second day to relieve the gas pains.

Cooke states that ether definitely impairs the defensive powers, lowers the blood-pressure two and one-half times more rapidly than nitrous oxide, and increases the coagulation time of the blood, besides

tending to produce post-operative complications, as pneumonia, etc.

Crile has noted that since using the anoci technique the operative mortality has fallen from 4.2 per cent to 1.9 per cent and 0.8 per cent in the last 1,000 operative cases. EUGENE CARY.

## SERA, VACCINES, AND FERMENTS

**Stresemann: New Studies of the Specificity of the Abderhalden Ferment Reaction** (Neuere Untersuchungen über die Spezifität der Abderhaldenschen Fermentreaktion). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 685.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In 68 cases examined carefully according to Abderhalden's latest directions, there were only five failures; that is, five women that were certainly not pregnant reacted positively with placenta. The author thinks this was due to errors in technique and he is convinced of the specificity of the reaction.

RUHEMANN.

**Lange, C.: Experiments with Abderhalden's Dialysis** (Erfahrungen mit dem Abderhaldenschen Dialysierverfahren). *Biochem. Ztschr.*, 1914, lxi, 193. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In describing the preparation of the placenta the author states that placentas from diseased individuals should not be used, as they may give rise to erroneous results; and, so far as possible, placentas should be rejected that come from individuals with albumin in the urine, as well as placentas that show numerous infarcts.

To avoid the loss of chorionic villi, he recommends that the placenta be not rubbed in the mortar too long. He uses Latapie's maceration apparatus, which makes a fine emulsion of the placenta. Before maceration as much as possible of the connective tissue is removed. The loss of specific substrate can be avoided by filtering the water in which it is washed, a point to which the author attaches great importance, for if it is not taken into consideration negative results may be obtained even in advanced pregnancy. Only physiological salt solution should be used to remove the blood from the placenta, for if tap water is used the hæmaglobin may be washed out of the erythrocytes, while the stromata remain.

Experiments showed that the stromata acted toward sera that catabolize blood-cells just the same as to the entire blood-cells. The author does not believe that the method proposed by Abderhalden for testing an organ for freedom from blood is practical; in fact, it may not be possible to make an organ absolutely free of blood—that is, free of the bodies of the blood-cells. He calls attention to several points in regard to boiling, especially to the insufficient state of coagulation of the albumin. On further boiling with distilled water more albumin is constantly being dissolved, and with sufficient concentration a positive ninhydrin solution may be



obtained. He also takes up the question of the dialyzing thimbles; he does not think that Abderhalden's method of testing them is satisfactory. He criticizes the biuret reaction and recommends the use of more sensitive albumin reagents, such as sulphosalicylic acid. In testing for the passage of peptone through the thimbles, he recommends the use of 0.1 to 0.3 per cent peptone solution instead of 1 per cent, as finer differences may be determined in this way. Neither is it sufficient to test the thimbles every four weeks — they should be tested afresh for every new experiment.

He discusses the method of obtaining the serum, the filling of the thimbles with the serum, and the effect of added hæmoglobin on the outcome of the reaction. It can be shown that the addition of hæmoglobin for experimental purposes does not alter the outcome of the reaction. It is difficult to get the same results twice by following Abderhalden's directions. In a test with serum and placenta a stronger ninhydrin reaction does not necessarily show catabolism, but it may be due to a summation of non-specific components. Neither does inactivation of the serum lead to uniform results, as has been shown by experiments with guinea pigs; therefore the author does not believe that catabolism is demonstrated by a difference in the ninhydrin reaction in parallel experiments with placenta and active serum, and placenta and inactive serum, because there are a number of other factors which might produce such differences.

To exclude errors due to the thimbles he tested a number of methods of dealbuminizing. To determine the non-coagulable nitrogen, the ninhydrin test or Pregl's microkjeldahl method may be used. Dialysis with distilled water is not reliable, as with it globulin may be precipitated; therefore, physiological salt solution must be used. Inaccurate measurement of the 0.2 ccm. of ninhydrin solution and the use of non-uniform reagent glasses are sources of error.

From his experiments the author concludes that Abderhalden's dialysis in its present form does not always give reliable results. With it he could not determine the specificity of serum ferments in pregnancy; and could not find placentas that were not catabolized by sera from patients with carcinoma and salpingitis.

BRAHM.

**Harmer, T. W.: Remarks upon the Effects Observed in the Use of Mixed Toxins (Coley) in Certain Cases of Sarcoma.** *Boston M. & S. J.*, 1914, clxxi, 253.

By Surg., Gynec. & Obst.

Harmer's paper is based upon observations made during the past five years in 91 cases. Of these, 32 are analyzed, first according to the type of sarcoma and then according to anatomical situation and tissue of origin. These 32 cases were all primary or recurrent inoperable sarcomata, or cases in which the disease could not be eradicated at operation. All were proved by microscopical examination. All were under treatment at least three weeks. In each

case the results were free from vitiation by concurrent treatment. All living cases had been seen or heard from within three months, most of them within a month.

The average age of all cases was 33.8 years. The average duration of treatment was a little over three months. The average maximum dose was 11.9 minims. The maximum dose was 53 minims.

The author classifies the cases in six groups according to the effect of the toxins: (1) Those in which there was no appreciable effect; (2) those in which growths softened but did not diminish in size; (3) those in which growths disappeared, or practically disappeared, but returned; (4) those in which growths disappeared but metastases simultaneously occurred; (5) those in which the growth diminished in size, but tumor still persisted; and (6) those which were apparently cured, in which growths have disappeared and no metastases have occurred.

The apparent cures include (1) fibrosarcoma of the septum and ethmoid; (2) giant-cell sarcoma of the antrum and superior maxilla; (3) large spindle-cell sarcoma of the ethmoid; (4) small round-cell sarcoma of the antrum and ethmoid; (5) small round-cell sarcoma of the antrum, ethmoid, superior maxilla, posterior septum, and nasopharynx; and (6) giant-cell sarcoma of the spine. These have remained apparently well since the conclusion of treatment: 3 years, 1 month; 3 years, 1 month; 2 years, 2 months; 2 years, 7 months; 2 years, 10 months; and 1 year, 11 months.

A pathologic study of two closely lying tumors in one individual, one untreated, the other treated, showed that the treated tumor was apparently destroyed by an inflammatory process and that the action of the toxins in this case must be considered local rather than systemic. In other cases, on the contrary, in which growths were inaccessible, injections at a distance have produced apparent cures. In such cases the action of the toxins must be regarded as systemic.

Harmer concludes from this study that although the determination of the increment of dose and the interval between injections requires some experience, even after considerable experience this method of treatment is uncertain. It is so uncertain and so distressing that its use is unjustifiable in any case in which operative measures of reasonable safety offer possible hope of removal. The percentage of apparent cures may be regarded as varying from 9.4 to 18.8. The study suggests that toxins offer no expectation of benefit in cases with multiple melanotic growths and in cases of mixed-cell growths. It suggests that they may be legitimately tried in cases with single melanotic growths and that they are apparently of value in cases with sarcomata arising in the nose and accessory sinuses, whether spindle-cell, giant-cell, or round-cell. The results of operative treatment of true giant-cell tumors are regarded as successful so that toxins are not advocated. Their use is, however, considered warranted in those cases, such as giant-cell tumor of the spine,

in which the growths are so situated that complete surgical eradication is impossible; and in these cases he believes that the attack should be primarily surgical, followed immediately by toxin treatment.

### BLOOD

**Foster, G. S.: The Axillary Sup.** *Surg., Gynec. & Obst.*, 1914, xix, 248. By Surg., Gynec. & Obst.

The idea brought forward is one partially suggested by Lane in his clinic at Guy's Hospital. The system as carried out, however, presents a new phase of the principle and broadens the scope of usefulness.

Foster recommends its use in all general surgical work for the purpose of avoiding shock, supplying fluid in excessive amount during the operation, and practically eliminating post-anæsthetic vomiting.

In reviewing fifty general surgical cases, carefully tabulated, only one case of post-operative vomiting was found, and even in this single case the amount was slight.

The principle of the axillary sup is to allow normal salt solution, temperature of 100°, to flow continuously into the loose tissue of the axillæ. The solution is contained in a reservoir placed at a proper height to permit atmospheric and volume pressure to aid the fluid in entering the subcuticular space. The fluid runs down a rubber tube, part of which is coiled in a basin containing water kept at a temperature of 105°, that cooling may not take place suddenly. This tubing divides into a "Y," at the ends of which are ordinary hypodermoclysis needles piercing the pectoral muscles to the axillary space; thus continuous flow is permitted during any operation. Its use should become general.

The amount of fluid ingested varies from 40 to 140 ounces. The strictest aseptic precautions are adhered to in every detail. The name axillary sup has been attached to this procedure by the author, who sums up as follows:

1. Post-anæsthetic vomiting is eliminated.
2. Surgical shock is ruled out.
3. Hyodermatic or other stimulation is shelved.
4. Freedom from pain and gas is noticeable.
5. The dreaded after-thirst is absent.
6. Regular and full cardiac action is maintained.
7. The Murphy drop is not a necessity, yet should not be forgotten.
8. The patients return from the operating room in better clinical condition than when they enter.
9. A watch should be kept for obstructed respiration; however, it will not occur under the trained eye.

**Satterlee, H. S., and Hooker, R. S.: The Further Development of an Apparatus for the Transfusion of Blood.** *Surg., Gynec. & Obst.*, 1914, xix, 235. By Surg., Gynec. & Obst.

The authors describe a method and apparatus for direct transfusion of blood through the agency of an intermediate receptacle, which is the practical out-

come of previously reported experimental work. A thin-walled gold cannula having a snugly fitting obturator is used in the donor's vein. The cannula with obturator is introduced through a small incision in the vessel wall, and this serves as a protective sheath through which, when the obturator is withdrawn, the metal tip of a paraffin-lined pipette is inserted directly into the blood stream of the donor without coming in contact with the wounded vessel-wall. The blood is removed from the donor in this manner, each pipette having a capacity of 200 ccm., and is carried to the recipient, where it is delivered through another cannula of somewhat similar construction. Both the donor's and the recipient's cannulas are connected by means of a lateral arm, with a reservoir of physiological salt solution, so that their interiors are automatically filled with an outflowing stream of the salt-solution during the brief intervals required for shifting the obturators for the pipette, or *vice versa*. This prevents the blood in the vein from entering the cannula; prevents the possibility of air embolism; and, at the close of the operation, provides a ready means of infusing salt solution into the donor's circulation to replace the blood which has been taken away.

The advantages claimed for the method are—

1. The liberation of thromboplastic substances in the carried blood is minimized by preventing disintegration of platelets through friction and contact with moistenable foreign surfaces, and by preventing contamination from wounded tissue.
2. The preparation of the donor's and recipient's blood-vessels with cannulas *in situ*, so that a successful transfer of blood is practically assured in advance.
3. The possibility of its employment in an emergency by a single operator.
4. It provides an ample margin of safety in the coagulation time of the carried blood, making haste unnecessary, and allowing the donor and recipient to be in separate rooms if desired.
5. The apparatus is adapted for use either with paraffin or with hirudin as an anticoagulant. By the hirudin method only minimal amounts of this substance are required, the effect being obtained by simply wetting the interior of the pipette with a solution of hirudin in salt solution and pouring off the excess of this fluid just previous to use.

### BLOOD AND LYMPH VESSELS

**Philipowicz, J.: Röntgen Treatment of Tuberculosis of the Lymph-Glands** (Beitrag zur Röntgen-therapie der Lymphdrüsen-tuberkulose). *Wien. klin. Wchnschr.*, 1913, xxvi, 2106.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Philipowicz, operator at von Eiselsberg's clinic, reports 26 cases of tuberculosis of the lymph-glands treated with röntgen rays, and confirms the already well-known favorable effects of this treatment on the local as well as the general condition. He has found the following technique the best: Helms' water-cooled tubes at 30 cm. distance, with alumi-



num filter 2 to 3 mm. thick; if the skin is very sensitive a filter of tinfoil on paper is also used. The soft rays are excluded. One erythema dose was given at each sitting. The hardness of the rays was 8 to 10 Benoist. As a general rule, the intervals were 8 days; if there was pain at the diseased site the intervals were lengthened to 14 to 21 days. Skin reactions were never observed. On an average 15 treatments were necessary, making the duration of the treatment 4 to 5 months.

According to the author's experience, röntgen treatment should become the predominant treatment for tubercular lymphoma, and should come into much more general use than it is at present.

AMSTAD.

### ELECTROLOGY

#### Holmes, G. W.: Some Experiments in Standardization of Dosage for Röntgen Therapeutics.

*Am. J. Röntgenol.*, 1914, i, 298.

By Surg., Gynec. & Obst.

The author, being unsatisfied with present methods of measuring X-ray dosage, has conducted experiments to determine whether the chemical and biological effects of the X-ray bear a fixed relation to the amount of electrical energy put into the tube. He used an apparatus giving a non-fluctuating and measurable voltage of any gradation between 10 and 80 kilo volts. The attempt was to find the required electrical energy at the tube terminals which would produce an erythema of the skin at a known distance in a known period of time. He finds this energy to be the same for all tubes having a target of the same material, regardless of the vacuum of that tube. Also it is immaterial whether this energy is produced by a high voltage and low amperage or *vice versa*, the wattage being the factor which determines the dose. Thus the author finds the same chemical and biological effects, for instance, with 40 kilo volts and 5 amp. as with 80 kilo volts and  $2\frac{1}{2}$  amp. at the same distance and for the same period of time. This is in direct contradiction to accepted opinion, as it is generally believed that an erythema will be produced quicker with a low vacuum tube than with a high vacuum tube, milliamperage, distance, and time of treatment being the same. The author produces an erythema of the skin with his apparatus, tube at a distance of 10 inches from the skin, in 3000 kilo volt-milliamperes-minutes. The result is practically the same whether the voltage on the tube terminals is 40, 50, 60, 70, or 80 kilo volts. The penetration of the rays given off is of course different for each reading.

Comparisons were made between the author's method of measurement and the Sabouraud pastille. The latter was found to record less than a dose when low voltage was used and more than a dose when high voltage was used. The author emphasizes the well-known fact that the Sabouraud pastille is only accurate for tubes of medium penetration, 6 to 7 Benoist. The author concludes that the results obtained by his method seem more accurate and easily applied than any other.

W. W. GRIER.

#### Abbe, R.: The Efficiency of Radium in Surgery.

*Ohio St. M. J.*, 1914, x, 461.

By Surg., Gynec. & Obst.

Abbe gives his estimate of the efficiency of radium treatment after eleven years' experience. He believes that radium is not a destructive, but a constructive, force and he says of it: "This is a stimulating force, recognized first in its effect on plant life, and later brought into use to explain some of the phenomena of its influence on tumors."

The facts are: (1) Radium retards seed growth. (2) Radium represses animal life as shown by experiments with worms. (3) Radium causes irritative spinal meningitis in mice. (4) Radium causes the disappearance of epitheliomata of the face. (5) Radium technique is exceedingly varied and not standardized. (6) Radium (and röntgen rays) cures skin epitheliomata, while surgery only removes them. (7) Radium cures the disease, whereas surgery only cures the patient.

The selective action of radium is proved by results in treating—

1. *Myeloid sarcoma*. Of this Abbe has ten cured cases, some of which had been previously treated by Röntgen rays without result, but readily disappeared under radium treatment.

2. *Round-cell sarcoma of the parietal bone*. He cites a case of a tumor, the size of a man's hand, which was cured by the insertion of a silver tube containing 100 mg. radium, through the tumor in two places, the tube remaining *in situ* eight hours in each place. The tumor was gone in three months "all but the thickness of blotting paper, which showed a remnant of the same cells, entirely inert, in the fibrous stroma."

3. *Papilloma*. Papillomata in any part of the body disappear uniformly after thirty minutes of radium influence. This treatment is of utmost importance in papilloma of the larynx. Abbe has treated a dozen such cases successfully.

4. *All basal-cell epitheliomata*. Radium's repressive action is here shown by immediate retrogression which is permanent over the ten-year limit. (Number of cases of ten-year cures occurring in eleven years not stated.)

*Myoma*. A series of cases is reported, in which one or two intra-uterine applications of radium have been followed by progressive shrinkage, as if the disturbed cell reproduction had been corrected.

Radium fails in—

1. *Spindle-cell sarcoma*. Instances of tumors of this type are found in the temporal bone, tibia, femur, radius, and popliteal space. Radium produces no retardation in the growth, nor any demonstrable microscopic change in the tumor cells.

2. *Squamous-celled epithelioma*. This type is characterized by rapid lymphatic involvement.

Discrimination in the choice of cases for the use of radium is therefore essential. Abbe's observations lead him to believe that if epitheliomata of the uterine cervix, of the follicles of the gastric mucous membrane, of the mammary duct follicles, and of the

follicles of the rectal mucous membrane, could be treated by radium before they extend into the walls of these viscera, they could be cured.

Among the large number of hopelessly advanced cases which have been submitted to radium treatment, it is no small tribute to radium's power to be able to say that one-tenth of these active cases showed retardation "and one-third, in time, added to the expectation of life."

Radium is not a specific. Its action is confined to a radius of perhaps a quarter of an inch. To destroy large masses, many tubes must be placed throughout the tumor. This treatment will be followed by necrosis and more or less toxæmia—never serious, and followed by excellent repair. Post-operative radium treatment promises a material advance. This principle, enunciated by Wickham, is one of killing, and safely leaving, a small remnant of malignant tumor. Abbe has one case in which he left a thin layer of cancer which had grown to the wall of the carotid artery. This remnant was radiumized, and the patient has been well for over five years.

The most definite good effect of radium is the blocking of all vessels, nourishing the growth by a process of endarteritis, as shown in capillary or angiomatous nævi—cheloid.

Abbe believes that not the least important rôle played by radium is in its special influence in causing retrograde in hypertrophic glandular structures like thyroids, lymph adenomata, lymphosarcomata, parotids, etc. This widens the important field of its usefulness. He states that he has treated half a hundred goiters of all varieties by radium alone, and has seen complete disappearance in a few cases, and checked the growth in many. He thinks the ideal treatment for most troublesome cases is thyroidectomy, but that there is a large proportion of goiter patients either not greatly annoyed, or who are unfit for surgery, who would be benefited by radium treatment. ARTHUR F. HOLDING.

**Von Eiselsberg: Experience in the Treatment of Malignant Tumors with Radium and Röntgen Rays** (Erfahrungen bei Behandlung maligner Tumoren mit Radium und Röntgenstrahlen). *Deutsche Gesellsch. f. Chir.*, 1914.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Even with the most critical judgment of the effect of radium and röntgen rays it cannot be denied that some very surprising results have been obtained. Radiotherapy is one of the most interesting problems of recent years, a final decision in regard to which cannot be made for some years to come. Prophylactic irradiation with radium, that is, treatment after an operation to avoid recurrence has apparently been of great value in many cases. In a case of incomplete operation for carcinoma of the upper jaw it certainly had a marked effect.

In a case of carcinoma of the tongue recurrence was probably hastened; in two cases the use of radium had no effect. It should be used for curative purposes only in inoperable tumors; the results are

the most favorable in basal-celled carcinoma; in 9 cases there were 7 recoveries. He also had good results in a carcinoma of the tongue, in a round-celled sarcoma of the axilla, and in a carcinoma of the thyroid, all of which were inoperable.

One cannot be certain of recovery for a long time, for in some cases after a temporary improvement the tumors grew worse. A carcinoma of the rectum that had been treated with radium could not be found on autopsy, but there were metastases in other organs, as well as a perforation of the small intestine from adhesion of two loops of intestine, due to the effect of the radium. The author saw similar by-effects of radium in three or four cases of carcinoma of the œsophagus. In all the cases there was improvement, insofar as the stenosis dilated, but in three cases there were secondary contractions above that caused by the carcinoma, which were due to radium burns. The technique of radiotherapy must therefore be markedly improved, for the effect of radium is not elective; it destroys not only diseased but healthy tissue. And when a tumor cannot be operated upon surgically on account of intimate adhesions to important organs, it cannot be treated with radium either. For example, a vessel passing through a tumor will be destroyed by radium, and hæmorrhage will follow. He points out also the severe cachexia caused by absorption after radium irradiation, and the differences in the reaction of different kinds of tumor to radium. Further progress can be made only by improvement in technique and determination of correct dosage. The author has also treated many tumors with röntgen rays. Here, too, prophylactic irradiation after operation has had very good results. A primary tumor of the testicle had been operated on with metastases in the abdomen, which disappeared under the action of röntgen rays. Large doses must be used, and care should be taken to avoid injuries of the skin. Röntgen rays should not be used as a substitute for operation. They should only be used in inoperable cases or for prophylactic treatment after operation.

WENDEL, of Magdeburg, reported 100 cases in which he used radiotherapy. They were all inoperable tumors except one case, a physician with carcinoma of the tongue who wished to have it treated in this way. He uses radiotherapy only under control of the eye, that is, only in superficial tumors or in deep ones that have been laid bare by operation. They have an elective effect to the extent that tumor cells are destroyed seven times as easily as normal ones. He recommends the use of large amounts of radium at long intervals. The different kinds of tumors react in different ways. He demonstrated four cured cases of inoperable tumors: a carcinoma of the parotid, a sarcoma of the tonsil, operated on 7 years ago with recurrence in the tongue, and a carcinoma of the temporal region.

WILMS, of Heidelberg, stated that prophylactic radiotherapy seemed to give excellent results, and



that metastases in the glands seemed to be specially adapted to irradiation, because they offer particularly favorable conditions for autolysis.

SPALITZER, of Vienna, has treated a large number of cases at the Vienna general hospital with röntgen rays alone, and points out that only large doses are successful. Operable tumors should be operated on.

KEYSSER, of Jena, reported favorable results of radiotherapy in two cases of sarcoma.

TILLMANN, of Cologne, thinks it doubtful whether the effect of the rays is elective, as different kinds of carcinomata react very differently to the rays.

MÜLLER, of Rostock, proposes to follow the old custom of speaking of a carcinoma as cured only when it has been free from recurrence for five years.

KRÖNIG, of Freiburg, pointed out that gynecologists treat operable cases also with radium and röntgen rays, and that inoperable cases may be rendered operable by radiotherapy. He reports successful results and prefers röntgen rays.

WERNER, of Heidelberg, reported 286 cases of carcinoma treated with mesothorium. In superficial carcinomata there was improvement in 88 per cent, in deep tumors in 40 per cent. Among 37 cases of carcinoma of the stomach 3 remained well for longer than a year after deep irradiation. Of 17 cases of carcinoma of the oesophagus 10 cases were improved for more than six months, only one for longer than a year.

HEYMANN, of Breslau, reported inoperable cases of carcinoma of the uterus treated at the Breslau clinic and described the technique in use there. They use a combination of high doses of röntgen rays and mesothorium. Also in inoperable cases of carcinoma of the cervix, which were prepared for operation by irradiation, the putrid discharge was stopped. Therefore the prognosis of this treatment has become better.

WARNEKROSS, of Berlin, reported that in Bumm's clinic, as they did not have the necessary amount of radium for successful radium treatment, large dosages of röntgen rays were used with good results. Even with large doses there was no skin burned.

KRAUSE, of Berlin, stated that in Bier's clinic prophylactic röntgen treatment after operation was used with especially good results in carcinoma of the breast. In two cases there was recurrence at a place the rays did not touch.

PERTHES, of Tübingen, reported a case of carcinoma of the lip cured by röntgen rays in 1904. It has been under observation for more than five years and there has been no recurrence.

HEIDENHAIN, of Worms, stated that, in his opinion, there is a great difference in the biology of the different kinds of carcinoma, and the good results obtained in one kind of carcinoma cannot be assumed to follow in other kinds. For example, in autopsies on women who have died of carcinoma of the uterus it has been found that in a third of the cases there were no metastases. Perhaps that is why the gynecologists have reported such good results from radiotherapy; while in 97 per cent of

the cases of carcinoma of the mammary gland there is involvement of the glands of the axilla and generally an infection of the entire mammary gland and of the lymph-vessels traversing the pectorals. In these cases, only radical operation is effective.

VON EISELSBERG, of Vienna, also pointed out the necessity for amputation of the breast in even the smallest carcinoma. KATZENSTEIN.

#### MILITARY AND NAVAL SURGERY

**Sanitary Service and Military Surgery on the Hospital Ships during the Campaigns in Lybia and Ägäa** (I servizi sanitari e la chirurgia di guerra durante la campagna di Libia e d'Egeo sulle navi-ospedale e negli ospedali dipartimentali). Roma: Ministero d. marina, 1913.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The two hospital ships *The King* and *The Queen* of Italy were most thoroughly prepared for the treatment and transportation home of the sick and wounded; the operating rooms were models—röntgen cabinets, bacteriological laboratories, etc., being provided. Some of the wounded were brought on board immediately after battle, some a few days later, so that the ships served as places for the first dressing of wounds and also as field hospitals.

Four hundred wounded men were treated on the *King* of Italy, and while it would be impractical to go into the details of the histories of the cases, the following points brought out by Chief Surgeon Rosati may be mentioned. Only tincture of iodine, hydrogen peroxide, and ichthyol glycerine were used as antiseptics.

The treatment of wounds was extremely conservative, even when there was extensive destruction of bone. Among the 400 cases there were only three amputations, and the results were excellent. Gunshot injuries of the skull, according to Rosati, cannot be operated upon quickly enough; in perforating injuries of the thorax all operation is contra-indicated; and in gunshot injuries of the abdomen, laparotomy should, as a rule, not be performed, because severe cases cannot be operated upon soon after the injury on account of shock, and slight injuries get well without operation. The question of laparotomy must be decided in each individual case.

On the *Queen* of Italy 1,323 wounded men were treated; the results here too were excellent and the surgeons, Vaccari and Crespi, followed the same general principles as Rosati. Operation should not be performed in hæmothorax unless there are alarming symptoms such as compression of the heart or lung on both sides in bilateral injury; puncture is particularly to be avoided.

The authors also believe that operation should not be performed in gunshot injuries of the spine, as it does no good; the prognosis is bad also in perforating abdominal injuries. Only Italian soldiers were treated and the wounds were inflicted by the lead bullets (Mauser) of the Arabians. The injury to the soft parts is greater with these bullets than with the modern jacketed bullets. HERHOLD.

## GYNECOLOGY

### UTERUS

**Poucher, J. W.:** Two Cases of Advanced Cancer of the Uterus, Apparently Cured by Post-Operative Infections. *Tr. Am. Ass. Obst. & Gynec.*, Buffalo, 1914, Sept. By Surg., Gynec. & Obst.

Poucher reports two cases of adenocarcinoma of the uterus in which the disease had advanced until the uterus was soft and broken down, and it was found impossible to remove all the affected parts. In both cases operation was followed by profuse sloughing and suppuration. Both cases recovered and have remained well since — one six years and the other two years.

**Dobbert, T.:** Results of the Treatment of Cancer of the Uterus with Radium (Ergebnisse der Behandlung des Gebärmutterkrebses mit Radium). *St. Petersb. med. Ztschr.*, 1914, xxxix, 97. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In the course of 4 months 44 cases were treated with radium, among them 31 of cancer of the cervix. The irradiation was accomplished with three tubes containing 53, 45, and 58 mg. radium bromide. The filters were gold, brass, lead, aluminum, and silver capsules. The greatest period of application at one time was 24 hours. The total duration of application was 6000 to 7000 milligram-hours. Of the 31 cervical carcinomata, 18 were inoperable, 7 barely operable, and 6 operable. Subjectively, there was marked improvement in the general condition. Objectively, there was rapid disintegration of the cancerous masses, for the most part without loss of blood. The infiltrations in the pelvic cellular tissue were less favorably influenced. In only one case was complete disappearance of the infiltration observed. Microscopically, the characteristic structure of carcinoma was no longer found after irradiation, but there were groups of non-viable cancer-cells of varying sizes. The treatment of some of the cases is not yet closed.

The author draws the following conclusions from his experience: (1) Beginning cervical carcinomata may be treated by radium before operation. (2) In advanced cases, because of the uncertainty of radium, radical operation is to be preferred. (3) Inoperable cancers are the best field for radium therapy. (4) Very far advanced cases are not adapted to radium treatment. DORN.

**Percy, J. F.:** The Treatment of Inoperable Carcinoma of the Uterus by Application of Heat. *Med. Press & Circ.*, 1914, xcvi, 165. By Surg., Gynec. & Obst.

The author discusses the work done by various experimenters in the use of heat as an agent to

destroy cancer-cells. If what Vidal and others say is true, it is a rational procedure to attack cancer with heat. Percy suggests a practical system of applying heat in otherwise inoperable carcinoma of the uterus. The penetration of heat by this method can be definitely, though perhaps crudely, determined and regulated. Where the malignant process is at all accessible, the method has almost no limitations. The required apparatus is not only easily carried, but is also inexpensive.

Percy uses an electric heating iron, which is perfectly regulated by means of a rheostat. With this iron and his water-cooled speculum and vaginal dilator, a maximum penetration and dissemination of heat are obtained in the involved structures. More than this, the low degree of heat, which his experiments show to be more effective than intense heat, can be maintained accurately. This degree of heat does not burn up the cancerous mass, but merely makes it so hot that the hand of the surgeon, encased in a medium-weight rubber glove, cannot hold it. When this degree of heat is reached and maintained for from ten to twenty minutes, the cancer-cells are absolutely killed, while the normal tissue-cells are not injured. The important thing is not to convert the tissue into charcoal. The charcoal thus formed inhibits a further dissemination of heat not only through the cancer mass, but beyond. Moreover, drainage is prevented for a number of days. This permits the absorption of a larger quantity of broken-down cancer-cells than the average of these patients can tolerate; many of them die as a result of this mistaken method of applying heat.

The heating iron, when used through the water-cooled speculum, should not be hot enough to scorch a pledget of white cotton, if laid on the heating iron even for half an hour. No smoke and no smell of burning tissues should issue from the speculum, as would occur if they were being carbonized. The ear placed near the speculum should hear only a gentle simmer or bubbling, while the heating head is in the diseased mass.

Cancer is destroyed when the temperature in the mass is raised to 50 to 55.5° C., while the vitality of normal tissues is not changed until the temperature exceeds 55 to 60° C. The basic idea, then, of this treatment is not cauterization, but the production and dissemination of heat in the gross primary mass of cancer.

The author states that it is not always best to attempt to destroy, at one sitting, a large mass of carcinoma. He strongly advises against the use of the curette, or other operative measures, for the reason that the heat is distributed through the



medium of the pathological overgrowth. Heat does not encourage the extension of metastases, while the curette and knife do. Again, scar tissue is not formed after the use of the curette, but it is the usual sequel after the application of heat. The author has yet to observe the redevelopment of cancer in cicatricial tissue. No statistics are mentioned, as they are reserved for a future paper.

EDWARD L. CORNELL.

**Childe, C. P.: Abdominal Panhysterectomy for Carcinoma of the Cervix Uteri.** *Brit. J. Surg.*, 1914, ii, 119. By Surg., Gynec. & Obst.

The only objection that can be urged against Wertheim's operation and the only point in which it compares unfavorably with vaginal caesarean section is in its primary mortality. This, of course, is important. At the same time, in a disease so certain to return unless completely eradicated, it is worth while running an increased primary risk for an additional chance of cure. The author believes that it is only a matter of time, work, and experience to bring down the primary mortality of abdominal hysterectomy very nearly, if not quite, to that of the vaginal operation. The author describes an operation with the object of reducing the primary mortality. It is a modification of the Wertheim operation.

As a preliminary, each case is examined under an anæsthetic, the cervical canal being dilated, if necessary, to locate the cancer. The motility of the uterus, the infiltration along the parametrium, the implication of the bladder and rectum, and the wisdom of recommending the operation are thus ascertained. A portion of the growth is obtained. If a growth is found in the vagina, it is thoroughly curetted and the cavity of the ulcer gone over with the Paquelin cautery.

About one week later the second operation is performed. This consists of a vaginal and abdominal stage. The base of the ulcer is curetted and cauterized. The vagina is dried and painted with tincture of iodine, after which it is closely packed. The pack is withdrawn later before the vaginal clamp is applied, with the result that when the vaginal canal is cut across, not a drop of discharge is seen.

The abdominal stage is on Wertheim's lines up to a certain point; i. e., the ovarian vessels are tied, the round ligaments crushed, the ureters isolated, and the uterine arteries ligated. The bladder and rectum are separated from the cervix and vagina until a couple of inches of vaginal tube are denuded. The remainder of the operation differs from Wertheim's. The author's clamps are now used. Those for the parametrium are strong crushing clamps, furnished with broadly serrated blades, and curved so that they fit the parametrium snugly at the pelvic wall. They have strong, flat, looped handles. One is placed on each side of the uterus, the point reaching the side wall of the vagina, and pressed so that the parametrium is crushed thoroughly. The latter is then cut on the uterine side close to the

blade. The clamps are left on. The vaginal pack is withdrawn and the vaginal clamp, similar to that above described, applied. The vagina is cut across and the uterus removed. Paquelin's cautery is then applied to the cut edges. The clamps are removed and the peritoneum is closed in the usual manner. Four ligatures only are employed, one for each ovarian and each uterine artery.

The following advantages are claimed for the operation:

1. It greatly simplifies the most difficult stage. The parametrium needs no ligatures.
2. The operation is shorter.
3. Clamping and cauterizing is a safer hæmostatic method.
4. Cancer-cells in the cut edges are destroyed.
5. No tissues are strangled in a ligature, and the pelvic wound is in an ideal condition for rapid healing.

During the past twenty months the author has operated eighteen cases. In no case has there been any hæmorrhage. In the only fatal case the rectum was implicated and was opened during operation. The operation was long and the patient died of exhaustion in twenty-four hours. The post-mortem showed no hæmorrhage. Primary union took place in all but two cases, but both patients made good recoveries. No vaginal douching was needed.

EDWARD L. CORNELL.

**Nagy, T.: A Sarcoma of the Uterus following Infectious Granuloma** (Über ein Sarkom der Gebärmutter, entstanden auf Grund einer infektiösen Granulombildung). *Arch. f. Gynäk.*, 1914, cii, 611.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A short critical review is given of the different methods of classifying sarcomata. A detailed description is given of the clinical, microscopical, and macroscopical findings in a sarcoma of the uterus, that developed from an old infectious granuloma. In the differential diagnosis between tuberculosis and syphilis, the author decided in favor of the latter, because, aside from the fact that there was no typical tubercle formation, there were more plasma-cells than epithelial cells; and, moreover, in the tissue necrosis, traces of the tissue structure could be recognized, and there were no signs of caseation.

After reviewing the scanty literature concerning tertiary syphilitic diseases of the uterus, the author comes to the following conclusions:

1. Tertiary syphilitic disease of the uterus is characterized by plasma-cell infiltration of the muscle-tissue, endovascular and perivascular proliferation, Langhans' giant-cells, and extensive tissue necrosis.
2. The glandular epithelium of the uterine mucous membrane may be replaced by many-layered non-horny pavement epithelium of benign character, which can be explained only as having arisen from indirect metaplasia. In these processes the syphilitic disease plays only the same etiological

part as any other pathological process that involves disturbance of the tissues.

3. The endovascular proliferation of the intima may undergo malignant blastomatous transformation, and tissues may then arise from it that, in accordance with the law of specificity in tumor formation, present the picture of angiosarcoma.

ALTSCHÜLER.

**Jansen, H.: Connection between Myoma and Carcinoma of the Body of the Uterus** (Über gleichzeitiges Vorkommen von Myom und Korpuscarcinom am Uterus). *Petersb. med. Ztschr.*, 1914, xxxix, 111.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Statistics show that carcinoma of the body of the uterus is much more frequent in the myomatous than in the non-myomatous uterus, about three per cent in the former to two per cent in the latter; also that the proportion of carcinomata of the body to those of the cervix is much greater in the myomatous uterus. Therefore, there must be some connection between myoma and carcinoma of the body of the uterus. The view that has been most held heretofore is that the myoma causes endometritic changes in the mucosa of the uterus, which forms a favorable ground for the development of carcinoma; the so-called adenoma diffusum was regarded as a characteristic affection of the mucous membrane in myoma.

From a study of the manifold and frequently contradictory histological findings in the older and the more recent literature, the author comes to the conclusion that there is no form of endometritis that is characteristic of myoma. In the majority of cases, to be sure, there was a more or less hyperplastic condition of the mucous membrane, but a recent work of Ivase is of especial significance; he points out that the hypertrophy of the mucous membrane in the myomatous uterus is, to some extent, a product of the hyperæmia caused by the myoma and the more energetic growth of the mucous membrane because of it, but that it is also in part a result of the phase of menstruation at the time the examinations were made. At any rate we must give up the idea of carcinomatous degeneration of an adenoma diffusum caused by the myoma. The only thing that can be deduced from the statistics is that myoma favors the development of carcinoma, because of the hyperæmia caused by the myoma and a chronic inflammatory irritation.

ADOLPH.

**Lejars, F.: Pyometra and Abscess of the Uterus** (Pyométrie et abcès de l'utérus). *Semaine méd.*, 1914, xxxiv, 229.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Two kinds of abscesses of the uterus can be distinguished: those of the cavity and those within the walls. The former are what were originally called pyometra. They are always caused by atresia of the cervix, which may be congenital or acquired. The retained blood or secretion becomes infected. The most frequent causes of atresia in later life are the so-called senile atresias, myoma, and carcinoma.

Occasionally, endometritis may cause obliteration of the cervix because of swelling of the mucous membrane, inflammatory adhesions, etc. All these forms of pyometra develop very slowly, but may reach considerable size, and occasionally may rupture into the neighboring organs, or in the worst cases into the abdominal cavity. In old women secondary changes in senile prolapse often cause pyometra. If gas-forming bacteria gain entrance, pyophysometra follows.

Mistakes in diagnosis are very frequent; hence inappropriate methods of treatment are chosen, such as abdominal or vaginal total extirpation. Pyometra may appear during the puerperium; if so, it is generally in the form of intraparietal abscesses and in very severe cases may lead to the so-called metritis dissecans. During the puerperium multiple small, or solitary large, abscesses may be established in the walls of the uterus. Frequently abscess of the uterus is associated with perimetritis or parametritis. Thrombophlebitis of the uterine or hypogastric vessels is a severe complication.

KNOOP.

**Novak, E.: The Pathologic Physiology of Uterine Bleeding.** *J. Am. M. Ass.*, 1914, lxiii, 617.

By Surg., Gynec. & Obst.

Novak calls attention to the fact that up to the present time the study of uterine hæmorrhage has been almost wholly along anatomical rather than physiological lines. Heretofore, speculation and indefinite conjecture have been the outcome of most of the investigation as to the physiological causes of uterine bleeding.

Following are the most important points in the author's summary:

1. Menstruation — a physiological phenomenon — should be the fundamental starting point in a study of the causes of pathological uterine bleeding.
2. The factors concerned in normal menstruation are:

- a. An ultimate cause, situated in the ductless gland chain — the ovary being the most important in this relation.

- b. A nervous mechanism, essentially vasomotor in character.

- c. The pelvic organs, particularly the uterus and its lining membrane.

3. The causes of abnormal uterine bleeding may therefore be grouped as:

- a. Fundamental, involving disturbances of the internal secretions.

- b. Nervous, exerting their effect mainly through the vasomotor nerves.

- c. Anatomical, in which the structural changes are present in the uterus or other pelvic organs.

4. There is good reason to believe that much light will be thrown on the fundamental causes of uterine bleeding by clinical methods of study which are based upon the relation known to exist between the ductless-gland apparatus and the vegetative (sympathetic and craniosacral autonomic) nerve system.

HARVEY B. MATTHEWS.



**Kelly, H. A. and Burnam, C. F.: Radium in the Treatment of Uterine Hæmorrhage and Fibroid Tumors.** *J. Am. M. Ass.*, 1914, lxiii, 622. By Surg., Gynec. & Obst.

Kelly and Burnam divide pathological uterine bleeding into four groups, as follows:

1. Bleeding uteri without demonstrable lesions — the so-called myopathica hæmorrhagica.
2. Bleeding uteri in young girls — the cause of which may fall into those in group one or three.
3. Bleeding uteri from polypoid endometrium; i. e., polypoid endometritis.
4. Bleeding myomatous uteri.

The four groups of cases have received radium radiation according to the technique as planned by the authors, and a table of their results for each group is given.

From their studies thus far with radium, the following conclusions may be drawn:

1. In the classes of cases cited, radium completely and permanently controls uterine hæmorrhage.
2. The rays have a specific and direct action upon fibroid tumors, causing them to disappear completely or be greatly reduced in size. Furthermore, it does not destroy the ovaries.
3. Radium can bring about a complete amenorrhœa at any age.
4. The menopausal symptoms which follow the amenorrhœa are absent in 50 per cent of cases, and mild in nearly all of them.
5. Intra-uterine radiation, in contradistinction to cervical or vaginal, is the method of choice. Abdominal radiation in conjunction may add to the rapidity of the results.
6. Radium radiation is preferable to surgical procedures in the vast majority of cases. If radium fails, surgery may have a chance, and there can be no harm in the waiting.
7. Radium is preferable to the röntgen ray, because it is simpler of application, acts more rapidly, and it acts on the uterus with more intensity than upon the ovaries.

HARVEY B. MATTHEWS.

**Seredey and Lemaire, H.: Treatment of Dysmenorrhœa** (Behandlung der Dysmenorrhœe). *Allg. Wien. med. Ztg.*, 1914, lix, 190.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author discusses the treatment of the different forms of dysmenorrhœa as follows:

1. During the attack he advises hot baths, 38° to 38.5° for 30 to 40 minutes, if necessary two or three times in 24 hours; rest in bed, soothing applications to the abdomen, wet hot compresses; suppositories of belladonna, chloral, antipyrin, or laudanum; fluid extract of senecin 20 drops every one or two hours.
2. During puberty, a simple diet is recommended. Fat and highly seasoned foods, game, mussels, sea-food, tea, coffee, and alcoholic drinks are forbidden. In many cases organotherapy is advisable: ovarian extract and extract of corpus luteum, combined,

if there is insufficiency of the thyroid with thyroid extract — 0.005 to 0.05; if there is hyperthyroidism and slight insufficiency of the hypophysis, with hypophysis preparations.

3. Ovarian dysmenorrhœa in mature women is treated by ovariectomy or resection of the diseased ovaries.

4. In women in the menopause, apiol, hamamelis virginica, hydrastis-canadensis, viburnum prunifolium, piscida erythrina, and cannabis indica are used.

5. In dysmenorrhœa of uterine origin, from aplasia, and flexion of the uterus, polyglandular treatment, massage, and pelvic gymnastics are beneficial. Sometimes dilatation with laminaria tents is used. Sometimes hydrotherapy and thermal baths and sometimes operation are resorted to.

6. Membranous dysmenorrhœa is benefited by the insertion of methylene blue powder in the uterus, and after dilatation, painting with iodine or curettage.

SCHÄFER.

**Keiffer, H.: Is There a Myometrial Gland in the Human Uterus** (Existe-t-il une glande myométriale dans l'utérus humain)? *Ann. et bull. Soc. roy. d. sc. méd. et nat. de Brux.*, 1914, lxxii, 26. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Ancel, Bouin, and other investigators found a so-called myometrial gland first in the uterus of pregnant rabbits, then in guinea pigs and in rats and mice. Keiffer then undertook to find out whether one existed in the human uterus. With this in view, when performing cesarean section in 7 cases, he cut small strips from the uterus along the incision and examined them. He found that the modifications in the smooth muscle fibers were similar to those in the pregnant guinea pig's uterus, and that they appeared and disappeared at the same period of pregnancy as in rabbits, guinea pigs, and other animals. The process of degeneration was a cytolysis.

WEIMER.

**Jacobs: Genital Prolapse** (Le prolapsus génital). *Bull. Soc. belge de gynéc. et d'obst.*, 1914, xxiv, 400.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In genital prolapse, in agreement with Martin's work, the author also distinguishes a suspending and a supporting apparatus and attaches the greatest importance to the ligaments, while most authors attribute it to the muscles. Rectocele is regarded as a consequence of weakness of the rectovaginal tissue.

1. Defectiveness of the suspensory apparatus is manifested as (a) cystocele and prolapse of the bladder, in which a successful operation, besides narrowing the vagina, must supplement or strengthen the atrophic tissue; (b) hernia of the vesico-uterine pouch and anterior vaginal enterocele, in which the operation consists of the pushing back of the excision of the peritoneal sac; (c) prolapse of the uterus, seldom appearing alone, but in conjunction with cystocele, anterior and posterior enterocele,

and rectocele; and (d) hernia in the recto-uterine pouch, rarely alone, but generally in connection with descent and prolapse of the uterus — in severe degrees there is also prolapse of the posterior wall of the vagina.

2. Defectiveness of the supporting apparatus is manifested as (a) prolapse of the posterior wall of the vagina, which is treated by excision and suture; (b) elongation of the cervix, in which the os is visible in the vulva, and finally there is total prolapse, metritis, and hypertrophy of the whole uterus — treated by amputation of the cervix and perineorrhaphy; (c) secondary prolapse of the bladder and uterus, in primary failure of the suspensory ligaments — any form of myorrhaphy being generally in vain here on account of the atrophy of the ligaments.

3. Rectocele due to weakness of the rectovaginal septum. In this, no method of operation, not even suture of the levator, can replace lost tissue. Resection of the prolapsed part of the rectum can be tried.

The conclusions are that the chief part of the work of holding the genital organs in place falls on the suspensory apparatus. As both suspensory and supporting apparatus are generally deficient, combined methods of operation are indicated.

PONFICK.

**Hance, T. B.: Retroversion of the Uterus, and the Sling Operation.** *Indian M. Gaz.*, 1914, xlix, 263.

By Surg., Gynec. & Obst.

The author advocates what is known in this country as the Webster round-ligament operation for retroversion from any of the following causes: puerperal, inflammatory, or mechanical. This "sling" operation is often combined with shortening of the uterosacral ligaments and the ovarian ligaments.

The puerperal cases may be corrected, if recognized within the first six weeks following labor, without operation by the use of an Albert-Smith or Hodge pessary and uterine tonics, as calcium lactate or ergot. "Should recurrence take place after a two months' trial," operation is advisable.

The mechanical cases of retroversion may arise from chronic constipation, a bladder chronically overdistended, or some abdominal or pelvic tumor.

Brief case reports of 29 cases helped by this operation done by Bell, are given at the end of the article.

EUGENE CARY.

**Willmoth, A. D.: Prolapse of the Uterus and Its Treatment.** *Lancet-Clin.*, 1914, cxlii, 9.

By Surg., Gynec. & Obst.

Willmoth emphasized the fact that the uterus is not supported and held in place by ligaments, but that it is supported by the entire pelvic floor, of which the ligaments are only a part.

The uterus is a balanced organ and can be displaced if the weight of the uterus is increased or the carrying power of the supports lessened, or where adhesions cause traction by pulling the uterus backward, or by increase of the intra-abdominal

pressure, or by sudden force, as from a fall, causing an acute prolapse. Another class of causes is traction from below as vaginal cicatrices, falling of the pelvic floor, abnormally short vagina from any cause, and cervical and vaginal tumors.

The descent of the uterus is of three degrees:

The first degree is where the uterus is found in extreme retroversion.

The second degree is where the cervix descends to the vulva.

The third degree is where the uterus protrudes partially or wholly from the vulva.

The development of prolapse is insidious and the symptoms are usually referable at first to other organs as bladder, rectum, or pains in the pelvis and extending to the thighs. Menstruation in the first stage is increased but gradually diminishes.

The treatment may be classed under four heads: (1) hygiene; (2) pessaries; (3) general and local treatment; (4) surgical operations.

The first includes proper dress, food, and regular habits. The author says that he has had many pleasing results from the use of a properly fitted pessary. He places pregnancy under the head of general and local measures and states that with considerable rest in bed after delivery (6 to 8 weeks), a moderate prolapse may be cured. He also advocates the knee-chest position several times each day.

From an operative standpoint, Willmoth advises an external operation on the round ligaments in young women with a shortening of the uterosacrals in a small per cent of the cases. In middle-aged women, the exact condition of whose pelvic viscera is not known, he uses the modified Gillian operation. In women near the menopause he advises supravaginal hysterectomy with an elevation of the remaining cervical stump.

EUGENE CARY.

**Jellett, H.: The Relation of Theory and Practice in the Operative Treatment of Genital Prolapse.** *Canad. M. Ass. J.*, 1914, iv, 661.

By Surg., Gynec. & Obst.

In the past, the frequent failure of operative treatment of prolapse has been due to two causes. The first of these is an insufficient anatomical knowledge of the relations and supports of the uterus, and the second is a desire to find a panacea which will be suitable for every case. There are two cardinal points that should be remembered in considering the treatment of prolapse: (1) That the exact lesions present differ to a very material degree in different cases; and (2) that any treatment, to be successful, must follow such lines as enable the operator to alter and modify its details in order to suit the special lesions and complications of each individual case. The knowledge of anatomy is therefore essential. This must be gained not alone in the dissecting room but in the examination of the living.

The vagina is supported below by the levator ani muscles. It is fixed to the pelvic wall by the vaginal suspensory ligament and supported by its



attachments to the cervix and by parts of the endopelvic fascia. The uterus is supported by its vaginal attachments, by the uterosacral ligaments, and by the different layers of the endopelvic fascia which pass into it laterally and anteriorly. The indirect support of the uterus is the pelvic floor, and this is of considerable importance. The author then takes each of these up and discusses them in detail.

Injuries accompanying labor affect both the direct and indirect supports. Deep tearing of the perineum destroys the slight attachments of the levator ani muscles to the central point of the perineum and so allows its lateral bands to diverge outwards, while actual tearing of the muscle itself destroys the continuity of its inner edge. The result is that the lateral bands are widely separated, and there is nothing to prevent the anterior or posterior vaginal wall from bulging directly down through the vaginal orifice. Once the support of the lower part of the vagina is lost, there is a tendency for the middle part also to descend, because the posterior and lateral walls, instead of resting on the levator muscles, are unsupported, and have their pull transmitted directly to the suspensory fascia. The author thinks that this progressive inversion is seldom seen clinically. What happens, rather, is that first the lower part of the vagina protrudes, then the vaginal fornices lose their support and descend, and finally, as a result of continued traction, the middle portion descends also. The first direct step in uterine prolapse is backward displacement. The weight of the uterus is thus transmitted to its vaginal attachments and to the endopelvic fascia, both of which are entirely unsuited to resist a direct strain.

Uterine prolapse is the result, in most cases, of an initial fault, which, by altering the normal strain to which the suspensory mechanism of the uterus is intended to be subjected, throws the elements of that mechanism out of sympathy with one another. This is the most essential point to grasp in planning a successful operation for prolapse, because just as the prolapse follows initially a single fault, so it will tend to recur after operation if a single weak point is left. Thus it is that ventral fixation, vaginal plastic work, and hysterectomy have failed. Rational prolapse operations consist of three parts: (1) The restoration of the normal direct support of the uterus and vagina so far as possible; (2) the placing of the uterus in such a position that it offers a maximum resistance to descent; (3) the removal of complications and associated conditions, the result of the prolapse. The various methods employed to remedy these defects are discussed.

Jellett reaches the following conclusions: So long as the posterior vaginal wall is left, as it is at present, with its supports in an imperfect condition, so long must operative procedure be defective. The interposition operation is excellent in a suitable case, but it is incompatible with pregnancy. The restoration of the pelvic floor is, in most cases,

effective, but it may again be destroyed during a subsequent labor. The very means adopted to reduce an enlarged uterus to a normal size may subsequently result in producing uterine atrophy, and thus remove the most effective part of the modern prolapse operation. EDWARD L. CORNELL.

**Shropshire, L. L.: A New Supravaginal Plastic Hysterectomy.** *Tex. St. J. Med.*, 1914, x, 168.

By Surg., Gynec. & Obst.

The author, having noticed that recovery after a hysterectomy was unnecessarily prolonged, arrived at the conclusion that the impingement of the nerve-trunks, supplying the uterus and its appendages, within the ligatures used in tying off the adnexa was largely responsible for it. To avoid this slow recovery and to prevent many reflex disturbances, which are manifest for so long a time after operation, the author devised the following method of procedure:

After the bladder is separated from the uterus down to the internal os, the uterus is clamped on either side from the insertion of the fallopian tube to its center at the internal os with a specially devised hysterectomy clamp. Using the clamp as a guide, the uterus is transfixed at the points of the clamp with a long, sharp-pointed knife, bringing the blade out at the fundus at the inner side of the clamp, making a smooth-cut surface. By drawing the clamps together, the two marginal cut surfaces of the uterus are brought in close apposition. With a No. 2 chromic gut suture, a needle on either end, the suture is started at the points of the clamps by passing one needle between the blades on one side and drawing the suture through to its center; then, by inserting a needle from either side, a saddler's stitch is made until the top is reached, when the

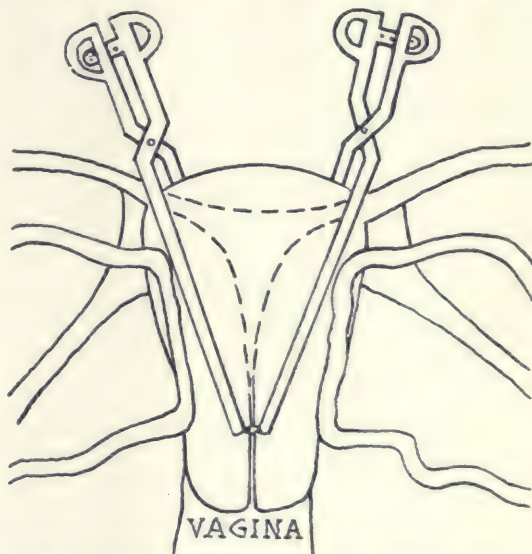


Fig. 1. (Shropshire.) Showing the clamps in place.

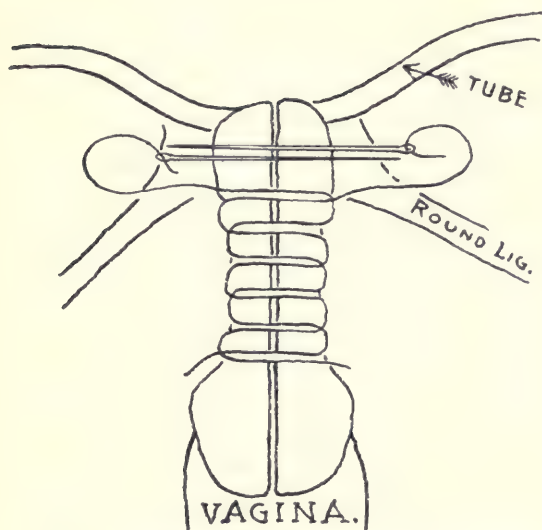


Fig. 2. (Shropshire.) Showing the saddler's stitch as applied.

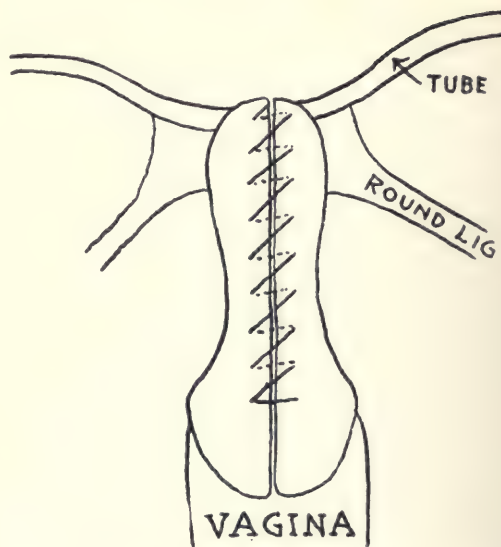


Fig. 3. (Shropshire.) Showing appearance of the stump after the running suture is made.

sutures are tied securely. The clamps are then removed and a deep running suture placed on the anterior surface beginning at the lower end of the cut. This is continued over the top of the stump and down the posterior surface to a point opposite the start of the suture. With fine catgut the bladder is fastened to this stump.

The author claims that this operation avoids tying off any of the nerve-trunks or the destruction of any important tissues. It is indicated in any hysterectomy, except for malignant degeneration. In cases of fibroid tumors where the special clamp cannot be used, the adnexa are caught between rubber-covered clamps in a similar manner. In the removal of pus-tubes, the tubes are separated from the broad ligaments and the clamps applied below them. Another great advantage is that there is much less danger of tying the ureter. In this operation the uterosacral, round, and broad ligaments are drawn so tightly across the pelvis that a perfect floor results. EDWARD L. CORNELL.

#### Bumm: The Uterus after Mesothorium Irradiation

(Uterus nach Mesothoriumbestrahlung). *Ztschr. f. Geburtsh. u. Gynäk.*, lxxvi, 273.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Examination of the uterus of a woman who had come to the hospital five or six weeks before with an extensive carcinoma showed that there was marked eversion of the lips, carcinomatous crater, infiltration in both broad ligaments, severe hæmorrhage, and fetid suppuration. After 14,000 mesothorium hours were given, the uterus was removed and macroscopically, at least, no signs of carcinoma could be found.

RUNGE.

#### ADNEXAL AND PERIUTERINE CONDITIONS

##### Schmincke: Ovarian Tumors (Ovarialgeschwülste).

*Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 840.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Four cases of ovarian tumors are reported as follows:

1. The first case was that of a 70-year-old woman with ovarian fibroma showing cystic softening.

2. Bilateral secondary ovarian carcinoma with diffuse cancerous infiltration of the whole uterus, the parametrium, and the upper part of the vagina was found in a 21-year-old girl with primary carcinoma of the ampulla of Vater.

3. The third case was a bilateral secondary metastatic cancer of the ovary with primary carcinoma of the breast in a 45-year-old woman.

4. Secondary ovarian carcinoma, with primary ulcerated adenocarcinoma of the lower part of the sigmoid flexure, with lactation of the breasts, and with "pregnancy"-hypertrophy of the hypophysis in a 19-year-old virgin, caused death from diffuse peritonitis. In spite of the peritonitis the patient showed marked euphoria until shortly before death. Probably this euphoria had some relation to a metastasis the size of a hazelnut in the marrow of the frontal sinus. Lactation hypertrophy of the breast is very rare in carcinoma of the ovary. It may be assumed that substances are formed in the tumor which act like hormones on the abdominal glands and cause the production of milk in the mammary epithelium. The cancer-cells are youthful cells of embryonic character with the production of a secretion that causes correlative, hyperplastic development of the mammary tissue, as well as changes in the hypophysis.

RUNGE.



**Mayer, A., and Schneider, E.: Disturbance in Function of the Ovary in Myoma of the Uterus, and Some Disputed Points in Regard to Myoma** (Über Störung der Eierstocksfunktion bei Uterus-myom, und über einige strittige Myomfragen). *München. med. Wchnschr.*, 1914, lxi, 1041.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

By the aid of Abderhalden's dialysis, the authors attempted to determine whether the anatomical changes in the ovaries in cases of myoma, such as increase in thickness, cystic degeneration and angiodystrophy, were associated with disturbance in the function of the ovaries.

The blood serum of 30 myomatous patients was tested as to its action on the ovaries of myomatous patients in the same and other individuals, as well as on the ovaries of patients with carcinoma, pregnant women, and normal women. The ovaries of normal women and carcinoma patients were never catabolized, but of the 22 patients with myoma who were tested with their own serum, 20 catabolized their own ovaries. The ovaries of other individuals were catabolized in only 50 per cent of the cases. This shows that, as a rule, patients with myoma have dysfunction of the ovaries, that there are active ferments in the serum and substances capable of being catabolized in the ovaries, but that these ferments are extraordinarily specific; for the ferments of the serum of a patient with myoma which catabolize a certain substance in her own ovary, will catabolize the ovary of another myomatous patient only when it contains this same substance.

The authors think that the dysfunction of the ovary is the cause of the pathological growth in the uterus. This seems to be indicated by the fact that in the so-called early myoma, puberty begins much earlier than in normal cases. The climacteric, which is well known to be a period of disturbance in ovarian function, is the most dangerous age for myoma — 70 per cent of the myomata observed occur from the fortieth to the fifty-fifth year. The frequent sterility of patients with myoma is also a sign of dysfunction of the ovary, as well as the delay in the climacteric in myomatous patients. The disturbance in ovarian function is primary.

BAB.

**Sessa, P.: Changes in the Child's Ovary in Infectious Diseases** (Sulle alterazioni dell'ovaio infantile nelle malattie infettive). *Pediat.*, 1914, xxii, 255.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author examined the ovaries of children, from a few months to five years old, who had died of acute or chronic infectious diseases, and who had shown no clinical signs of ovarian disease. Nothing was perceptible macroscopically on autopsy. Microscopically there were generally more or less pronounced changes; after acute infectious diseases there were generally inflammatory changes in the cortex; in chronic diseases, such as tuberculosis, there were interstitial changes in the ovaries. The finer histological changes are described. In very acute infectious diseases, especially in diphtheria,

there were frequently degenerative cysts in the parenchyma of the ovary that were visible only microscopically.

ASCHENHEIM.

**Brill, W.: The Histology of the Sympathetic in Its Relation to the Internal Secretion of the Ovary** (Die Histologie des Sympathicus in ihren Beziehungen zur inneren Sekretion der Ovarien). *München. med. Wchnschr.*, 1914, lxi, 1256.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

After sketching the internal secretory tissue of the ovary, the follicle apparatus and its derivatives, the corpus luteum, and the internal ovarian glands, as well as the general histology and physiology of the visceral nervous system, the author describes the histological picture of its groundwork in the ovary. In the ovary of rabbits and mice, a visceral ganglion, which is regarded as the most important transforming station for all forms of stimulation flowing into it, shows extensive branching of the cerebrospinal sympathetic fibers around the ganglion-cells and chromaffin-cells which fill this sympathetic ganglion of the ovary. Other fine terminal networks surround the axis cylinder processes with loose meshes, and the surface of the ganglion-cell with end-buds. These are numerous large, multipolar ganglion-cells with a network of neurofibrils that can be followed far into the axis cylinder processes, and many widely branching dendrites.

The relation of the chromaffin-cells to the ganglion-cells seems of especial importance from a functional point of view. The peripheral visceral innervation of the ovary, with its far-reaching effect on the generative and intergenerative tissue elements, is also represented in its end-branches, pericellular end-networks with numerous varicose formations in the course of the nerve-fibers and at the end of the nerve-fibrils.

As in other glandular organs the end-branches of the nerves penetrate between all the cell elements of the part of the ovarian tissue that is concerned in internal secretion. The innervation of the internal secretory tissue of the ovary, here represented, provides a broad histological foundation for great independence on one hand, and on the other, for a far-reaching influence of the afferent stimuli on all the specific functions of the ovary.

RUNGE.

**Schiffmann, J.: Changes in the Ovaries after Irradiation with Radium and Mesothorium** (Über Ovarialveränderungen nach Radium- und Mesothorumbestrahlung). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 760.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Different kinds of experiments were tried. Guinea pigs were used and in some cases the radium carriers together with the ovary were sewed into an artificially formed pocket of peritoneum, while some of the carriers were laid free in the abdominal cavity. But in either case there were extraordinarily intense and characteristic injuries of the ovarian tissue. The granulosa cells and the ovum cells were most injured; the mature follicles were transformed into

cysts; the germinal epithelium remained intact; and neither the interstitial cells nor the corpus luteum showed any constant changes. KÜSTER.

**Pirami, E.: The Adnexa in Inguinal Hernias** (L'ernia inguinale degli annessi). *Clin. chir.*, 1914, xxii, 213.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Hernias containing the adnexa, five cases of which are reported, are only occasionally found in old women with relaxed abdominal muscles; in other cases they are caused by anomalies in development, corresponding to descent of the testes in the male. The diagnosis is very difficult in small girls, especially differentiation from omentocele; in adult women points in diagnosis are pain in the coccyx, dysmenorrhœa, change in volume during menstruation, and, especially, bimanual examination. The treatment must be surgical, especially taking into consideration the frequent complications, such as atrophy, cystic degeneration, new-growths, and torsion of the pedicle, except when the hernia also contains the pregnant uterus. NÄGELSBACH.

**Schickele: Etiology of Pyosalpinx** (Zur Ätiologie der Pyosalpinx). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 721.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The patient, who was 20 years old and had always been well, took a douche of soapsuds to prevent conception and it was followed by bilateral suppurative salpingitis. There was rapid development of pyosalpinx on both sides, the left one rupturing on the sixth day after infection. Severe peritonitis immediately developed. The operation, which consisted of resection of both tubes and drainage through the vagina, was followed by recovery. Hæmolytic streptococci were cultivated from the pus. RUHEMANN.

**Taussig, F. J.: Sarcoma of the Round Ligament of the Uterus.** *Surg., Gynec. & Obst.*, 1914, xix, 218.  
By Surg., Gynec. & Obst.

The author reports an unusual case of spindle-celled sarcoma of the round ligament, associated with moderate prolapse of the uterus. The tumor was removed from a woman, 44 years of age, whose only complaint was a pressure against the bladder for the previous two years. The uterus, tubes, and ovaries were normal and the origin of the tumor from the round ligament was confirmed by microscopic examination. No metastases were found in any of the abdominal organs or lymph-glands, and the well-developed vessels within the tumor indicated its slow growth. Taussig was able to find a record of only five other cases of sarcoma of the round ligament, and in all of them the microscopic examination showed a malignant degeneration of a previously existing fibromyoma.

A review of the literature of round-ligament tumors showed a record of 141 cases of this sort. Taussig analyzes the physical and pathological

characteristics of this form of tumor. It springs more frequently from the extra-abdominal portion of the round ligament and, apparently, is a little more common on the right than on the left side. Pregnancy stimulates its growth.

The most interesting feature of these tumors is their varied pathology—79 of them belong to the group of fibromyomata. In 19 instances there was a cyst covered by fibromuscular tissue. In one patient a dermoid cyst developed from the round ligament. The frequency of adenomyoma is perhaps the most striking characteristic. In Taussig's tabulation 30 cases out of 135 were thus diagnosed, making them relatively four times as frequent in the round ligament as in the uterus. This may be due, perhaps, to the close relationship to the wolffian duct and the nephrogenic band extending almost the entire length of the embryo. The 6 cases of sarcoma all seem to have been comparatively benign and no reports of recurrences or metastases are found.

## EXTERNAL GENITALIA

**Müller, R.: Myoma of the Vagina** (Beitrag zur Kenntnis der Vaginalmyoma). *Arch. f. Gynäk.*, 1914, cii, 511.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports 4 cases of myoma of the vagina: 2 in women and 2 in dogs. He discusses the cases published by Kleinwächter in his collective review; he having collected 53 cases in 1882. Müller reports the 112 cases published since then, and discusses their etiology, histogenesis, topography, growth, size, age of the women, anatomy, clinical symptoms, diagnosis, and prognosis. BAUER.

**Paris, J., and Francey, F.: Indications and Technique of the Transvesical Operation in the Treatment of Vesicovaginal Fistulæ** (Indications et technique de la voie transvésicale pour la cure des fistules vésico-vaginales). *J. d'uro.*, 1914, v, 311.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

This method is indicated when the fistula is near the ureters, when it is complicated with stone in the bladder, when the vaginal opening is high up near the cervix, when there is much scar tissue in the region of the vaginal opening or adhesions to the pelvic bones after extirpation of the uterus. In very large fistulæ with involvement of the neck of the bladder the vaginal route should be preferred.

The author does not favor Legueu's transperitoneal route nor Bardeheuer's inversion of the bladder. He makes a long incision in the median line. The interior of the bladder is exposed by means of a retractor, the edges of the fistula are freshened, the vaginal opening closed with a purse-string suture, the bladder opening sutured with deep and superficial catgut sutures, and the bladder closed with drainage below and above, the patient occupying either the abdominal or lateral position. In 4 out of 6 cases there was complete recovery; in one case, where



the neck of the bladder was involved, there was only decrease in the size of the fistula with incontinence persisting, and once the sutures did not hold. In one case, though continence of the bladder was restored, the high incision made a ureterovaginal fistula through which urine trickled; this was later overcome by extirpation of the kidney. FRANK.

**Rosenstein: Secondary Repair in Complete Tear of the Perineum** (Über die Sekundärnaht bei kompletten Dammrisen). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 771.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

For secondary repair, it is not necessary to wait six weeks or to send the patient to a hospital. The operation can be done at the end of two weeks in the patient's house. The buried sutures of the rectum should not penetrate the mucous membrane. Granulations and any new-formed tissue should be thoroughly removed at the beginning of the operation. The bowels should be moved first on the sixth day by means of castor oil. ALTSCHÜLER.

**Jellett, H.: Suture of the Levator Ani Muscle in Perineorrhaphy Operations.** *Lancet*, Lond., 1914, clxxxvii, 315. By Surg., Gynec. & Obst.

Although it is a generally accepted fact that the support furnished by the levator ani muscle, either with or without its investing fascia, is essential to the pelvic organs, none of the older methods of perineorrhaphy provides for such suture. It is surprising how many are content to practice these operations, because they consider, and in fact are told, that suture of the levator ani muscle, however essential it may be, is a difficult operation and one not devoid of danger. During the past three years and a half, 346 perineorrhaphies have been performed. In practically all, the levator ani muscle has been sutured; in an occasional case union has failed to occur and a hæmatoma has formed. There has never been a death, nor even a patient whose condition gave rise to anxiety owing to the occurrence of emboli from punctured venous plexus.

The essential features of the operation are as follows: (1) The careful dissection of the necessary amount of vaginal mucous membrane off the rectum; (2) the exposure and suture of the separated levator ani muscles; and (3) the careful approximation of the cut edges of the vaginal mucous membrane in such a manner as to leave no projection or redundancy. The author then describes his technique in detail. The advantages of his operation are its ease and its rapidity.

The following conclusions are reached:

1. Routine suture of the levator ani is an essential part of perineorrhaphy.
2. Routine suture is always practicable, except where the muscle is wanting owing to atrophy after injury.
3. The exposure and suture of the levator ani are neither difficult nor dangerous.

EDWARD L. CORNELL.

## MISCELLANEOUS

**Hauser: Vaccine Diagnosis and Treatment in Gonorrhœa in Women** (Über die Vaccinediagnostik und Therapie bei der Gonorrhœe der Frau). *Berl. Klin.*, 1914, xxvi, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author's experiments in diagnosis and treatment were carried out with Reiter's vaccine A.—10. His conclusions are that injection of gonococcus vaccine is a useful method of differential diagnosis. A positive focal reaction, as well as a positive general reaction, accompanied by a positive local reaction, shows the presence of gonorrhœa. A negative result does not absolutely exclude gonorrhœa.

In all cases of local gonorrhœal disease with an active focus or one capable of reactivation the vaccine causes a rapid improvement in the subjective symptoms, and in many cases there is also objective cure. Because of the small number of cases and the fact that they were not under observation long enough, no decisive judgment can be passed on its therapeutic action or its ultimate results. But, at any rate, vaccine treatment is to be recommended as a supplement to other treatment. BLANCK.

**Pazzi, M.: Mutual Functional Relations of the Glands of Internal Secretion as an Element in the Causation of Changes in the Psychic Personality of Woman** (Correlazione funzionale delle glandole a secrezione interna come elemento di concausa nella mutabilità della personalità psichica della donna). *Ginecol. mod.*, 1913, vi, 38.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Pregnancy is regarded as the source of an endo-intoxication, from which the woman can neither guard against nor save herself if the normal antitoxic functions and the functions of the glands of internal secretion do not do their part and overcome the threatening physiological disturbances and restore the organism to its normal balance.

It cannot be denied that pregnancy is a cause of mental disturbance which may drive the woman to madness with criminal tendencies and with partial or total annihilation of consciousness of her actions. A detailed review is given of the literature regarding the function of the hypophysis and its relation to the genital organs. The author believes that the mental and psychic disturbances that lead the pregnant woman to destroy her child are related to disturbance in the function of the hypophysis. Because of a transitory interference with the balance of the circulation in the brain at the moment when the fetus leaves the uterus, this disturbance of function manifests itself in a stormy, aggressive, and temporary form. He believes, further, that the negative pressure in the abdomen causes a hyperæmia from vacuum in the pelvic organs that interferes with the nutrition of the brain. This does not explain the pathogenesis of crime, but it broadens the field of legal medicine. MESTRON.

**Andrews, H. R.: Tuberculosis of the Female Genital Organs.** *Clinic. J.*, 1914, xliii, 535.  
By Surg., Gynec. & Obst.

The author states that, according to the statistics of several writers, tuberculosis of the female genital organs occurs comparatively frequently, but that it is not of clinical importance except when it involves the fallopian tubes or the cervix. The infection is seldom primary in its origin, but is usually secondary to a tuberculosis of the lungs or of the alimentary tract; the infection being conveyed by: (1) blood; (2) bronchial glands; (3) tuberculous peritonitis, when particles, usually from an infected appendix or cæcum, have been swept into the fallopian tubes by the peristaltic movement of their cilia; (4) gonorrhœal salpingitis, which predisposes to a tuberculous infection by destroying the integrity of the mucosa of the tube; (5) tuberculous semen (not proven); (6) tuberculosis of the rectum, which may by continuity extend to the vagina; (7) soiled clothing, directly infecting the vulva; (8) tuberculous urine, causing a local infection of the vulva.

The chief clinical importance of tuberculosis of the cervix is that it may be mistaken for carcinoma. The infection usually begins in the mucosa of the cervical canal or in the deep part of the glands, but it may occur on the vaginal aspect of the cervix. In appearance it resembles ectropia, or it grows in masses of fine elongated papillæ glued together with viscid mucus. The absence of friability and tendency to bleed, together with the soft edge, and the youth of the patient, would usually differentiate it clinically from carcinoma, but the microscopical examination of a section removed from the cervix should establish the diagnosis.

In tuberculosis of the fallopian tubes the mucosa is the first structure to be involved; the muscle is the next, and the peritoneum the last. The involvement is usually bilateral, both abdominal ostia being closed and the tubes studded with miliary tubercles, while cheesy nodules may lie in the wall or in the interstitial part of the tube; or the whole tube may be enlarged, tortuous, adherent, and filled with cheesy material as a result of the infection. In the chronic stage there is an excessive formation of connective tissue with calcification of the contents of the tube and dense adhesions to the neighboring structures. The symptoms are constant pelvic pain, with increased and painful menstruation. The uterus is fixed in the pelvis, and at one or both sides may be felt a densely adherent mass. In the early stage of the infection there is no alteration of the tubes macroscopically, and it is not usually possible to make the diagnosis except by the aid of the microscope, but later the condition is characteristic of tuberculosis.

If tuberculosis of the cervix is seen early, the author believes it is possible to effect a cure by scraping and cauterizing the diseased area, but if not seen until a late stage he advises the removal of the cervix, or the cervix together with the

uterus and the appendages if they seem to be involved.

In tuberculous salpingitis, according to the writer, there is no hard and fast rule for dealing with the adnexæ. If the adhesions to the intestines are not too extensive, both tubes should be removed together with both cornua containing the interstitial part of the tube. If the adhesions to the intestine are dense and there are no evidences of tuberculous ulceration of the intestine nor suppuration of the tube, it is better to leave them alone, as in such cases removal is often followed by the formation of a fecal fistula, and there is some danger of producing an acute general tuberculosis. As the uterus may be diseased, and since it is useless without the tubes, hysterectomy may be advisable, although it increases the severity of the operation and many patients have remained in good health when the tubes only have been removed. The ovaries are often healthy even when the tubes are diseased, and should not be removed in a young woman unless they are definitely involved.

If drainage is employed, it should be done through the vagina and not through the abdominal wound, in order to lessen the risk of a fecal fistula or an infection of the wound and a resulting post-operative hernia.

LILIAN K. P. FARRAR.

**Ulesko-Stroganowa, K. P.: Malignant Tumors of the Female Genitalia** (Die bösartigen Geschwülste des weiblichen Genitalapparates). *Vrach. Gaz.*, 1914, xxi, 750.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author calls attention to the great prevalence of malignant tumors of the female genital system. He thinks this is due to the frequent irritation of the genital system, which leads to hyperæmia and this in turn causes hyperplasia. The hyperplasia carries the germs of malignant degeneration. It is often difficult to distinguish benign hyperplasia from malignant tumors, either macroscopically or microscopically. He agrees with Orth and Hansemann's opinion that hyperplasia is a precancerous condition.

VON HOLST.

**Klímenko, V.: Diphtheria of the Genital Organs in Children** (La diphtérie des organes génitaux chez les enfants). *Clin. prat. méd.-chir. et spéc.*, 1913, ix, 247.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A ten-year-old girl, after two days' sickness without inflammation of the throat, developed a diphtheria of the genitals which caused pain on urination. A sister of the patient had a diphtheritic angina. It was assumed that the infection had been transmitted through the clothing, but the possibility suggested by Conradi and Bierast should be taken into consideration, namely, that bacilli may be excreted through the urine even in cases where no inflammation of the throat has been noticed. The disease begins with burning on micturition, swelling and bluish red color of the labia majora, which are painful to the touch. The swelling



increases and a few days later a pseudomembrane appears. Early serum treatment is important with a view to decreasing the relatively high mortality.

KÜSTER.

**Winslow, R.: The Significance of Pain in the Right Iliac Fossa in Young Women.** *Hosp. Bull. Univ. Md.*, 1914, x, 81.

By Surg., Gynec. & Obst.

Right-sided pain is usually thought to be due to appendicitis. The acute cases or the chronic cases with definite localizing symptoms are readily recognized. In the author's experience this symptom in young women is often due to some other cause. Some are of undoubted hysteric or neurotic origin, but with some underlying physical cause. He differentiates from enteroptosis by injecting the colon with bismuth and by X-ray; from nephroptosis by palpation of the kidney, under an anæsthetic if necessary; from disease of the right tube by vaginal examination. In several operations for supposed appendicitis, a small ovarian tumor was found in each case. Cholelithiasis with distended gall-bladder may simulate appendicitis but percussion over the gall-bladder will elicit marked tenderness and the gall-bladder can be detected, under an anæsthetic if necessary. Stone in the right ureter gives urinary symptoms with blood in the urine. Abdominal crises, due to Meckel's diverticulum, perforating ulcers, intestinal obstruction, and pneumonia, particularly in children, are to be considered. In typhoid fever the fever precedes the pain as pointed out by Murphy.

The author states, in conclusion, that he has come to believe that in young women, unless the symptoms of appendicitis are frank and clear, the condition is probably something else. Pain and tenderness in the right side, without rigidity, elevation of temperature and leucocytosis is usually not appendicitis. Again, apparently severe and long-continued pain in the right side in girls is more likely to be neurotic than appendiceal. Pain may also be reflected from the pelvic organs or some of the other viscera, and the primary seat of the disturbance may be determined by a more careful examination.

S. A. CHALFANT.

**Ebeler, F.: Röntgen Treatment in Gynecology** (Die Röntgenbehandlung in der Gynäkologie). *Strahlentherap.*, 1914, iv, 579.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author discusses the röntgen treatment of myoma, carcinoma, and diseases of the uterus. The technique at first was that of Albers-Schönberg, later 15 cm. focal distance, 3 mm. aluminum filter, hardness of tubes 10 W, intervals of three weeks between the series of treatments. In the beginning 22 fields with 180 to 240 X, later 12 fields

with 90 to 120 X per series. Among 32 cases of myoma 21 were treated, with amenorrhœa resulting in 76.19 per cent, oligomenorrhœa in 9 per cent, and failure in 14.2 per cent. Among 20 cases of uterine disease there were good results in 93 per cent, amenorrhœa in 80 per cent. Five cases of carcinomata were treated with röntgen rays alone, with disappearance of suppuration and pain, and cleaning up of the ulcers. One carcinoma was treated with röntgen rays and radium combined.

MÜLLER-CARIOBA.

**Jayle, M. F.: The Employment of Hypophysary Opothrapy in Gynecological Practice; Its Immediate Results.** *Med. Press & Circ.*, 1914, cxlix, 216.

By Surg., Gynec. & Obst.

In a series of over 400 cases Jayle attempted to determine the immediate effect of the administration of a pituitary preparation upon patients affected with various utero-ovarian troubles. The gland selected was that of the ox, and it was prepared after the method of Choay. The preparation was administered subcutaneously, each ampulla corresponding to 0.05 gm. of the posterior lobe. The injections were given every other day, beginning with one-fourth of an ampulla, the dosage being increased daily, so that a whole ampulla was given as the fourth dose.

General reaction was noted at once; it consisted of blanching, colicky pains, headache, and insomnia. Ten cases, taken at random from the series, are briefly reported, the following results being obtained: diminution and often complete arrest of uterine discharges; relief of pelvic pain arising from salpingitis, metritis, and parametritis; regulation of the menses; and control of hæmorrhage due to subinvolution, metritis, and sclerosis of the uterine vessels.

WM. H. CARY.

**Benthin, W.: Bacteriological Examinations in Gynecological Diseases; the Question of Auto-Infection in Gynecology** (Bakteriologische Untersuchungen bei gynäkologischen Erkrankungen. Ein Beitrag zur Frage der Selbstinfektion in der Gynäkologie). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 651.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Unfortunate results after gynecological operations always bring up anew the question of autogenous or endogenous infection. For this reason the author examined 500 cases bacteriologically. The mortality in those with hæmolytic streptococci was 29.4 per cent, while in the cases where they were not present it was 4.2 per cent. An attempt must be made to free the vaginal secretion from bacteria before the operation, especially from hæmolytic streptococci. The most effective method seems to be warm douches with 1/1000 bichloride.

WEISSWANGE.

# OBSTETRICS

## PREGNANCY AND ITS COMPLICATIONS

**Michel, F.: The Significance of Abdominal Pregnancy for the Practitioner** (Die Bedeutung der Bauchschwangerschaft für den Praktiker). *Fortschr. d. Med.*, 1914, xxxii, 637.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The etiology of the above is not definitely determined. Chronic salpingitis is of importance, as is shown by the fact that the average age of women who have extra-uterine pregnancy is 30 years, and that the pregnancy is generally preceded by several years of sterility. The consequences of chronic salpingitis are adhesions of the mucous membrane and formation of diverticula in the musculature of the tube. Internal or external causes, such as erosion of a blood-vessel, coitus, or a blow, may cause a sudden hyperpressure in the intervillous spaces, and the thin wall of the tube ruptures, causing rupture or tubal abortion. With the first free bleeding the ovum is floated out of the ampullar end of the tube, and the remnants that are left behind cause secondary hæmorrhages that sink down into Douglas' pouch and form hæmatocele. The foetus generally dies, and maceration and sometimes infection and suppuration take place.

The symptoms vary, depending on whether there has been rupture or abortion. Important points in the history are preceding inflammation of the tubes, sterility, irregular menstruation, interference with urination, attacks of dizziness, and, objectively, the findings on palpation. Differential diagnosis must be made from inflammatory tumors of the adnexa, inflammatory exudate, appendicitis, and perforating peritonitis, and in the middle third of pregnancy from retroflexion of the gravid uterus, and torsion of the pedicle of an ovarian cyst. In doubtful cases exploratory puncture of the vagina may be made. Michel does not think that Abderhalden's reaction can yet be depended upon. He would not attempt sounding or curettage on account of the danger of infection. He agrees with Sigwart that operation is "a social necessity."

GINSBURG.

**Kohlmann, W.: The Treatment of Early Tubal Pregnancy, with Report of Cases.** *N. Orl. M. & S. J.*, 1913, lxvii, 130.

By Surg., Gynec. & Obst.

Since January, 1912, the author has operated upon 20 cases of ruptured tubal pregnancy with one death. Nine cases operated upon immediately after rupture were in a serious condition.

In case of doubtful diagnosis the patients were kept under careful observation in the hospital. Kohlmann operates immediately without waiting for recovery from shock. In serious cases infusion

is begun as the abdomen is opened. The abdominal route is always chosen. Large clots and liquid blood are removed but no elaborate toilet of the peritoneal cavity is made. The diseased tube is always removed. The other tube is not removed if healthy. He prefers to drain these cases through the posterior vaginal fornix.

WM. H. CARY.

**Sselitzky: Eclampsia without Convulsions** (Eklampsie ohne Krämpfe). *Festschr. f. Prof. Pobedinsky*, Moscow, 1914.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author discusses the different forms of intoxication in pregnancy and tries to classify them. He takes up the theories of eclampsia, basing his conclusions on the anatomical changes in the internal organs. He agrees with Schmorl's conception of eclampsia without convulsions. Eclampsia is not a disease of any special organ, but of the organism as a whole, and eclampsia without convulsions is neither an abortive, rudimentary, atypical eclampsia nor an "eclampsia without eclampsia," but is an independent typical subvariety of eclampsia.

The case history is given of a 35-year-old primipara who was troubled with difficult respiration, headache, and severe pain in the region of the heart. All her labors had been difficult on account of contracted pelvis. Foetal heart sounds were not perceptible. The child was delivered spontaneously, was dead, and weighed 2,050 gms. The placenta was also delivered spontaneously. Four hours later the patient showed restlessness, disturbance of vision, twitching of the face muscles, coma, but temperature normal. After one and one-half hours coma occurred again, and lasted for five minutes. The pulse was 140; icterus developed, followed by coma again. The per cent of albumin was 18; there were different forms of cylinders. Anuria ensued, and the patient died of heart failure and œdema of the lungs. Post-mortem examination showed parenchymatous degeneration of the heart muscle; the liver was enlarged and had necrotic foci; venous stasis and œdema were present. The kidneys were large and œdematous. There was bloody transudate in the pleural and peritoneal cavities. Microscopically, there was shown to be necrosis of the brain tissue, heart muscle, kidney epithelium, liver cells, and lung tissue. There was total necrosis of tissue in the spleen, also in the mammary glands, pancreas, thyroid, and interstitial tissue of the uterus. The diagnosis was necrosis of the viscera. The author excludes sepsis. The micro-organisms that were found in places had entered post-mortem.

He collects 51 cases from the literature — 34



of them, or 66.6 per cent, died. The author thinks that 11 cases of Albeck's that recovered should be excluded, and this brings the mortality up to 90 per cent. The treatment of eclampsia is rapid delivery and serum treatment. Expectant treatment is irrational. Blood-letting is occasionally helpful. The work is accompanied by a bibliography of 97 titles.

JENTTER.

**Lichtenstein: Euphyllin as a Diuretic in Eclampsia** (Hebung der Diurese bei eklamptischen Koma durch intramuskuläre Euphyllininjektionen). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 833.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Lichtenstein reports five cases of eclampsia in which he increased the defective diuresis by injections of euphyllin. A critical judgment of the effect of the remedy in the cases given is, as the author admits, extraordinarily difficult. In suitable cases, however, the advantages of the new diuretic—prompt action and the possibility of application by injection—should be utilized, possibly in connection with digitalis, which is said to heighten the effect of euphyllin. The author recommends three injections daily of 0.48, and in some cases it should be given prophylactically. The remedy is an addition to the methods of treating eclampsia.

ENGELMANN.

**Bernstein, R.: Dermatologic Toxæmias of Pregnancy; Their Recognition and Treatment.** *Hahneman. Monh.*, 1914, xlix, 605.

By Surg., Gynec. & Obst.

The author describes briefly the dermatological manifestation of the toxæmias of pregnancy, which are, he says, little different from those of any other toxæmia. The treatment of the skin condition is dependent upon removing the toxic condition. He has the patient drink copiously of soft or distilled water, opens the bowels, and uses a rice diet. Locally he uses some mild soothing lotion, as calamine lotion, an ointment as unguent, bismuth sub-nitrate, or an oleaginous substance—as olive-oil emulsion. Internally he uses the remedies indicated by the general skin condition.

C. H. DAVIS.

**Richter, M.: Air Embolism in Criminal Abortion** (Über Luftembolie bei krimineller Abtreibung). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 620.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The first case was in a 28-year-old woman who had injected soapsuds into the uterus with the so-called balloon syringe and was found dead. There was foamy blood in the right heart. In both ovarian arteries, especially the right one, and in the inferior vena cava there were also numerous air-bubbles. In the uterus, between the lower pole of the separated ovum and the uterine wall there was also foamy blood.

The second case was also a 28-year-old married woman who had attempted abortion with an irrigating syringe and boric acid solution. Here, too,

there was foamy blood in the right heart, the inferior vena cava, and the pelvic veins.

In all cases of sudden or unexplained death in pregnant women it is well to think of the possibility of embolism from air or from the injection of toxic substances into the circulation. If air embolism is suspected the autopsy must be performed in a special way. The skull should not be opened before the section of the abdominal organs, because blood may flow out of the longitudinal sinus and allow air to enter. Air embolism is more apt to occur when the patient herself has applied the douche. The fatal result may not follow immediately, but sometimes after several hours. The best prophylactic measure is to prevent the sale of intra-uterine douches to the laity.

BENTHIN.

**Mauclair and Tissier, L.: Gangrenous Perforation of the Uterus after Induced Abortion** (Perforation utérine gangréneuse après avortement provoqué). *Bull. Soc. de méd. lég. de France*, 1914, xlii, 95.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Infectious metritis is only exceptionally the cause of gangrenous perforation of the uterus; the great majority of the cases are caused by mechanical or chemical injury of the wall of the uterus. In support of this view the following case is reported: Laparotomy was performed on a 20-year-old girl for peritonitis, 48 hours after an attempt at criminal abortion in the second month of pregnancy. In the middle of the fundus there was a circumscribed, bluish, softened spot; but there was no perforation. Death resulted after 10 days. Autopsy showed a crater-shaped perforation at the necrotic spot.

RUHEMANN.

**Lepage, G.: Treatment of Abortion** (Conduite à tenir dans les accidents consécutifs à l'avortement). *J. de méd. et de chir.*, 1914, ix, 128.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The majority of cases of abortion are criminal in nature. It is advisable to obtain a knowledge of such procedures beforehand, as the treatment depends on whether or not they have been undertaken. Spontaneous abortion has a favorable prognosis if not caused by a febrile general condition. In afebrile two-stage abortions the expectant method can be followed for a considerable length of time. If criminal attempts have been made previously, the expectant treatment must be shortened. An attempt should be made to hasten the delivery of the ovum by sulphate of quinine. If this medication has no effect, the uterus must be emptied with the finger, or with instruments under the control of the finger. If fever appears after the emptying of the uterus, the uterus must be irrigated and drained and often curetted. The latter should not be done when there are symptoms of disease of the adnexa, uterus, or peritoneum. In abscess of Douglas' pouch colpotomy may be useful. Hysterectomy is seldom necessary; generally local treatment is sufficient if it is undertaken soon enough.

With these methods of treatment in 370 cases



there was a total mortality of 1.62 per cent. It was 0.39 per cent in the cases where operation was not necessary, 4 per cent in the operative cases. The prognosis depends less on the method of treatment than on the condition of the patient when she reaches the hospital.

FRANKENSTEIN.

**Deletrez: Dermoid Cysts of Both Ovaries and Pregnancy** (Kystes dermoïdes des deux ovaires et grossesse). *Bull. Soc. belge de gynéc. et d'obst.*, 1914, xxiv, 461.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In 1,132 cases of ovarian tumors the author has encountered pregnancy 12 times. Torsion of the pedicle occurs oftener in the first half of pregnancy than in the second. Rupture of the cyst does not occur any more frequently in pregnancy than at any other time. Every ovarian tumor diagnosed during pregnancy should be operated on. Ovariectomy is justified by (1) the dangers to which the woman is exposed during the pregnancy, such as torsion of the pedicle, rupture, and suppuration; (2) the complications that it may cause during labor; and (3) consideration for the child's life. In pregnancy, there are 17 per cent of abortions, and 39 per cent of the children die during labor. The abdominal route is to be preferred to the vaginal. Deletrez reports a case of successful removal of two ovarian tumors by the abdominal route in the third month of pregnancy.

JAEGER.

**Banister, J. B.: Pregnancy Complicated by Severe Morbus Cordis; Two Cases Treated by Hysterotomy under Spinal Anæsthesia.** *Lancet*, Lond., 1914, clxxxvii, 444. By Surg., Gynec. & Obst.

The first patient was a primigravida, four months pregnant, with uncompensated mitral stenosis. At the time of delivery she had œdema of both lungs. She was delivered by vaginal hysterotomy under spinal anæsthesia and died the next day.

The second patient, who was eight and a half months pregnant, had myocardial degeneration. There had been three failures of compensation in the last three pregnancies. She was delivered by abdominal cæsarean section, and was sterilized during the fifth decompensation occurring in the fifth pregnancy. Both mother and baby did well.

The author believes that hysterotomy, vaginal up to the twenty-fourth week and abdominal after that date, under spinal anæsthesia is the best method of treating severe cardiac lesions, as it subjects the patient to the least strain. Successive pregnancies materially shorten the expectation of life, and for that reason sterilization should be carried out whenever practicable.

F. C. IRVING.

**Bertlich, H.: Interference with Pregnancy and Labor by Malformations of the Uterus, Especially Uterus Bicornis** (Schwangerschaft und Geburtsstörungen bei Missbildung des Uterus, speziell bei Uterus bicornis). *Wien. klin. Rundschau*, 1914, xxviii, 303.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author discusses the disturbances of pregnancy and labor from bicornuate uterus, basing his

conclusions on 5 cases of his own and 60 from the literature. The most frequent complications are a tendency to premature interruption of the pregnancy, lengthening of labor, rupture of the uterus, abnormalities in the position of the foetus, and interference with the third stage. Diagnosis and treatment are discussed and in the matter of treatment, Strassmann's method of uniting the two horns of the bicornuate uterus is preferred.

SIEBER.

**Remy, S., and Remy, A.: A Case of Death from Embolism during Pregnancy** (Un cas de mort par embolie au cours de la grossesse). *Rev. mens. de gynéc., d'obst., et de pédiat.*, 1914, ix, 253.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The authors report the case of a VI-para, who, after the fourth pregnancy, had had an inflammation of the intestines, from which she soon recovered. The fifth delivery was rapid and uneventful and the puerperium normal. In December, 1912, after she had stopped menstruating the menses reappeared, but the hæmorrhage stopped under suitable treatment and the pregnancy continued. September 24th was reckoned as the time of the beginning of pregnancy. On the seventeenth of June she complained of pains in the calves of her legs due to indurated veins, but the trouble improved with rest and compresses. Ten days later she had pain in the pubic region. On the morning of the third of July she got up, and suddenly became pale and fainted. She recovered consciousness but felt very bad. The pulse was bad, and the respirations steadily grew more rapid. In spite of abundant administration of stimulants she grew worse and worse. In the afternoon labor pains began. Twenty-two hours after the appearance of the first symptoms of embolism she died. Foetal heart sounds were still heard after her death, and as the pains had already dilated the os, the child was extracted by version. The child was dead.

BENTIN.

**Delagénière, H.: Pernicious Vomiting of Pregnancy and Appendicitis** (Vomissements incoercibles de la grossesse et appendicite). *Gaz. de gynéc.*, 1914, xxix, 145.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Delagénière gives five case histories in detail and points out that in a certain number of cases pernicious vomiting of pregnancy is caused by chronic appendicitis with acute or subacute exacerbations. Appendectomy brings about a cure of the vomiting without the necessity of interrupting the pregnancy. He believes that the majority of cases of pernicious vomiting are caused by some irritation of the peritoneum, the peritoneum being sensitized, so to speak, by the pregnancy. The cause of the vomiting in some cases may be appendicitis; in others retroflexion of the pregnant uterus, salpingitis, ovarian cysts, etc. In such cases it is only necessary to remove the cause in order to cure the vomiting. Emptying the uterus has the same effect, because the sensitiveness of the uterus is decreased; but if pregnancy occurs again the vomiting is sure to return.

FRANKENSTEIN.



**Lynch, F. W.: The Treatment of Pernicious Vomiting of Pregnancy.** *J. Mich. St. M. Soc.*, 1914, xiii, 459.  
By Surg., Gynec. & Obst.

From his investigations the author concludes that the term ammonia coefficient should be discarded as inaccurate in meaning unless qualified by the absolute amounts of ammonia it is supposed to describe. There is doubtless a toxæmic basis for all cases which deserve the diagnosis of hyperemesis gravidarum. These cases present the urinary findings of acidosis. The crystals of leucin and tyrosin were readily demonstrated. This was considered to be an indication of starvation.

In cases of the chronic type the following treatment has rarely failed: Rest in bed is most important. Large doses of bromide, 40 to 60 gr. q. 4h., are given by rectum. Sodium bicarbonate and glucose are also given. Nothing is given by mouth for several days until the bromide has taken strong effect and vomiting has ceased. Liquid food is not well tolerated. Solid food, especially broiled meat, is given. With improvement carbohydrates are added to the diet. Water is not given with the meals, sufficient fluid being given as normal saline by rectum. This treatment is not indicated in the fulminating type of case with icterus and other severe clinical symptoms. Such cases should be aborted without delay. Chloroform anæsthesia should never be used. Nitrous oxide with oxygen is better than ether. In desperate cases morphine and scopolamine narcosis is urged. Wm. H. CARY.

**Cavarzani, D.: Bossi's Method in Osteomalacia** (Die Methode Bossi bei Osteomalacie). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 623.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports the results he has obtained with Bossi's method of adrenalin treatment in osteomalacia. Bossi believes that the adrenals regulate bone metabolism. In pregnancy, the balance in bone metabolism is disturbed, partly because of the greater functional claims on these glands, and partly by the antagonistic effect of ovarian secretion, so that osteomalacia is produced, which is indicated in the physiological changes of pregnancy. The best proof of this theory is the result of adrenalin treatment.

The cases in which recovery has been obtained by pituitrin, thyreoidin, etc., are to be regarded as the result of reciprocal relations existing between different glands with internal secretion. Since osteomalacia is a disturbance in nutrition of bone or in the bone-producing function, it will be influenced by all agents that tend to keep this function in a normal condition. BRUNO WOLFF.

#### LABOR AND ITS COMPLICATIONS

**Sasonow: Statistics of Delivery in Contracted Pelvis** (Zur Statistik der Geburt bei Beckenenge). *Festschr. f. Prof. Pobedinsky*, Moscow, 1914.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The work is based on 8,661 obstetrical case histories. Of these, 2,338 were in contracted pelvis

— 26.9 per cent. There was operative delivery in 222 cases. In primiparæ the most of the operations were forceps at the outlet and in the cavity of the pelvis; in multiparæ high forceps, perforation, artificial premature delivery, etc. There was perforation in 6.7 per cent of the operative deliveries.

Artificial premature delivery gave unfavorable results for the children, of whom 75 per cent died. Operative delivery was necessary in 12.6 per cent of the primiparæ with contracted pelvis, and in 8.3 per cent of the multiparæ.

The majority of the operative deliveries were in cases of flat pelvis; 84.6 per cent of the primiparæ had a normal puerperium after spontaneous delivery; and 70.5 per cent after operative delivery. In multiparæ the figures were 90.6 per cent and 79.8 per cent. Four women died. The mortality of the children was the same for primiparæ and multiparæ. In operative delivery 28 per cent of the children were dead; deducting those dead before delivery reduces the mortality to 14.6 per cent. Delivery was, on the whole, conservative, as 90.5 per cent of the cases were delivered spontaneously. JENTNER.

**Stroganoff, W. W.: Management of Labor in Contracted Pelvis** (Über die Leitung der Geburt bei engem Becken). *Russk. Vrach*, 1914, No. 18, 633.  
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author gives a general review of the methods of operation in use in labor with contracted pelvis, and, from the statistics of maternal and infantile mortality in operative delivery and spontaneous delivery, with a true conjugate of 7 cm. or more, comes to the following conclusions:

1. In absolutely contracted pelves — true conjugate 5.5 to 6.5 cm. — cesarean section should be performed. In infected cases or those where infection is suspected, it should be done by Küstner's or Latzko's extraperitoneal method.

2. With a true conjugate of 6.5 to 7 cm. and a living child, cesarean section should be performed. Perforation should be done only in case the mother refuses a major operation. If the child is dead, perforation should be done.

3. With a true conjugate of 7 to 8 or more and a living child the author recommends: (a) In primiparæ, conservative treatment. If the head enters the pelvis and operation is indicated, forceps delivery may be undertaken. If, in the second stage, the head remains for some hours above the pelvic inlet, extraperitoneal cesarean section should be recommended to the mother. If she does not consent, forceps should be attempted, and if this fails, perforation must be resorted to. (b) In multiparæ, who have had living and viable children before, expectant treatment should be tried first, and then forceps, or, if the head does not enter the pelvis, pubiotomy. If the patient has borne only dead children before and the deliveries have been very difficult, artificial premature delivery should be proposed during pregnancy, and if refused, pubiotomy, forceps, or possibly perforation should be undertaken during labor. A. WERTH.



**Kirstein: Delivery of a Woman with a Kyphotic Funnel-Shaped Pelvis** (Entbindung einer Frau mit kyphotischem Trichterbecken). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 723.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A very small primipara had a rachitic double S-shaped curvature of the spine and marked funnel-shaped pelvis. The promontory was displaced far backward, the apex of the sacrum forward, the tuberosities of the ischia inward, so that the outlet of the pelvis was very narrow — true conjugate 7.5, transverse 9 cm. After 15 hours' pains the head had reached the floor of the pelvis in good position. Three hours later no more progress had been made. Perforation of the living child was being considered, but, contrary to expectation, an attempt at forceps delivery succeeded, and a strong living child was delivered without injury.

RUHEMANN.

**Florence, J.: Frequency of Shoulder Presentation; Indications for Version and Embryotomy** (De la fréquence des présentations de l'épaule; indications de la version et de l'embryotomie). *Bull. Soc. d'obst. et de gynec. de Par.*, 1914, iii, 375.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In the tropics where rickets is unknown and abnormalities of the pelvis are rare, embryotomy is seldom if ever performed, but version is performed even in extreme cases of transverse presentation. The author believes that podalic version should be undertaken only when the hand can be inserted in the uterus, but that when the hand cannot be inserted a mutilating operation should be performed. Rupture of the uterus by the hand is not much to be feared. In 66 cases of version the author has never seen it occur. Embryotomy with Museux's instrument without decapitation is to be undertaken only in severely infected cases of transverse presentation, as the latter method can be carried out without a completely dilated os, without special instruments, and without any great degree of injury.

DORN.

**Potocki and Sauvage: Retraction of the Uterus on the Decapitated Head** (Rétraction de l'utérus sur la tête fœtale séparée par décollation). *Ann. de gynec. et d'obst.*, 1914, xli, 257.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In order to extract the decapitated head, traction may be made with the finger placed in the mouth; if this fails forceps may be used; if this fails also craniotomy must be performed. If the uterus is convulsively contracted, all these methods may fail, even under anaesthesia. Then an attempt must be made to relax the uterus by the giving of large doses of morphine or chloral. The delivery of the head is then easy, and often occurs spontaneously. Though the head has been known to remain in the uterus as long as 112 days, such a delay should not be allowed, as it is too dangerous. If all other methods fail, the last resort is total extirpation. The authors had to perform total extirpation after decapitation in a case of neglected transverse presenta-

tion in a girl of 17, as it was not possible to reach the head in any other way, the uterus having contracted tetanically around it. After having septic parotitis the girl recovered.

JAEGER.

**Zimmermann, R.: Cause of Surprisingly Rapid Delivery in Disease of the Spinal Cord** (Über die Ursache des überraschend schnellen Geburtsablaufes bei Rückenmarkserkrankungen). *Arch. f. Gynäk.*, 1914, cii, 563.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A III-para had an attack of acute anterior poliomyelitis, and barely three hours after the rupture of the membranes a very large child was delivered, in spite of the complete lack of abdominal pressure, and in spite of disproportion between the size of the child and the pelvis. Such a surprisingly rapid delivery would suggest the thought that the activity of the uterus is unbridled, and that certain regulating inhibitions that are active under normal conditions were here done away with. Zimmermann points out that a reflex action on the uterus could take place only through the spinal cord; and if a stimulating effect of the central nervous system is possible, then the conclusion is justified that the central nervous system could also have an inhibitory effect on the activity of the uterus.

Complete anaesthesia of the lower half of the body does not delay delivery. If total paralysis of the lower half of the body and the lower uterine segment, together with the abolishment of sensation, is brought about by spinal anaesthesia with stovaine, in the first stage the frequency of the pains is decreased and the pauses between them lengthened; in the second stage, however, as long as the anaesthesia continues, the length of the pains increases and the pauses between them grow shorter. The inhibitory reflex that restrains the excessive irritation of the nerves of the genital organs and pelvic floor by the presenting part of the child is a wise provision, as it protects the body of the parturient woman from a too brutal effect of the automatic activity of the uterine musculature.

BAYER.

**Ahlfeld, F.: Treatment of the Third Stage, and Manual Separation of the Placenta** (Nachgeburtsbehandlung und manuelle Placentalösung). *Ztschr. f. Geburtsh. u. Gynäk.*, 1914, lxxvi, 167.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Ahlfeld comes to the following conclusions: The less external manipulation of the uterus is done the less necessity there will be for manual separation of the placenta. The cases that do occur will be due to pathological conditions, and are not dependent on the expectant method nor on external manipulations.

FRANK.

#### PUERPERIUM AND ITS COMPLICATIONS

**La Torre, F.: Nutrition in the Puerperium** (Come si deve nutrire una puerpera). *Clin. ostet.*, Roma, 1914, xvi, 145.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author thinks it desirable that physicians should give more attention to the subject of diet,



and reach some conclusion as to the diet of mothers and of grandmothers, or old women. In order to decide what nutrition is suitable for the puerperium, we must take into consideration what has happened and what is still to happen: the toxins collected during pregnancy and labor must be gotten rid of, and the body must be brought back into a normal condition, while undergoing a period in which certain injuries and alterations are still affecting it, such as lochia, milk secretion, excessive excretion of sweat and urine.

If the physician keeps clearly in mind that the puerperium is a time during which the injured organism is undergoing a *restitutio ad integrum*, it will give him a clue to the proper diet to be given, though of course the constitution and conditions of life of the patient must be taken into consideration. He will probably have considerable opposition to overcome in the carrying out of such a régime, for the public is all too much inclined to adhere to the old false ideas, according to which the body of the woman, in need of restoration to strength, was still further weakened by a diet of tea and other non-nutritious substances, and by excessive purgation, sometimes even by blood-letting. The author thinks that many diseases of the puerperium, even permanent injuries to the system, can be avoided by a suitable diet.

FUCHS.

**Beckmann, W.: Puerperal Inversion of the Uterus**

(Einige Bemerkungen über die puerperale Uterus-inversion). *Zentralbl. f. Gynäk.*, 1914, xxxviii, 649. By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

Beckmann reports two cases in which he undertook operative reinversion by Küstner-Piccoli's method. Both cases were apparently pure cases of inversion, but afterwards both showed severe symptoms of infection, from which one died. Therefore, before the operation, he treated the inner surface of the uterus in the second case with tincture of iodine; staphylococci had been demonstrated on it. He left Douglas' pouch open and drained it. There was local infection of the pelvic peritoneum, but the patient recovered.

He sees a further disadvantage of this operation in the gaping of the edges of the uterine wound. In both his cases he thinks the inversion was entirely spontaneous; he explains it as the result of decreased tonus of the uterine muscle in connection with paralysis at the site of the placenta, short cord, large placenta, or location of the placenta at the fundus.

FRANKENSTEIN.

**Flint, Jr., A.: Retrodisplacements of the Uterus, Following Confinement.** *Am. J. Obst.*, 1914, lxx, 1.

By *Surg., Gynec. & Obst.*

The author calls attention to the fact that while many papers are written on displacements little has been said of the frequency and causation; and that the writers of textbooks on obstetrics have passed it by with a few general statements regarding the use of the knee-chest position on the pessary.

In 272 private and hospital patients there was a retroversion in 58, or in 21.3 per cent. Of 37 cases occurring in hospital practice, 25 were primiparæ and 9 of these had no apparent laceration. The author believes that retroversion after labor is an accidental occurrence; that is, a heavy uterus, freely movable in the pelvis may be turned over backward or may remain forward according to a variety of circumstances. He cites two cases in which the uterus was found in position, and in which a retroversion occurred a short time later, due to constipation.

A slowly involuting, or a subinvolved uterus, abnormally movable after confinement and often associated with lacerations, is the condition which causes retroversion.

Lacerations of the perineum and of the cervix delay involution not only of the uterus but of the vagina. Of 25 primiparæ, lacerations occurred sixteen times, a frequency of 64 per cent; and in the 37 hospital cases lacerations occurred twenty-six times, or in 73 per cent; 48 per cent of the primiparæ had a laceration of the cervix.

In 100 cases in which there was no retroversion there were 78 primiparæ and 22 multiparæ. Of the 78 primiparæ, lacerations of the perineum occurred twelve times, a frequency of 15+ per cent, and lacerations of the cervix 14 times, or approximately 18 per cent; 63+ per cent of the multiparæ had lacerations of the perineum. One patient had a complete tear through the sphincter but no displacement of the uterus.

By avoiding lacerations, by aiding the involution of the uterus, by routine bimanual examination, and the use of the knee-chest position after the twelfth day, the author believes that half of the retrodisplacements can be prevented. When retroversion does occur the treatment should be begun at once.

C. H. DAVIS.

**Jeannin, C., and Levant, A.: Prognostic Value of Study of Hæmokonixæ in Icterus during the Puerperium** (Contribution à l'étude de la valeur pronostique de la recherche des hémokonies dans les ictères de la puerpéralité). *Arch. mens. d'obst. et de gynec.*, 1914, iii, 375.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

Hæmokonixæ, discovered by Müller in 1896, can be studied especially well with the ultramicroscope. They appear in great numbers in the blood during fat digestion and from differences in their number conclusions can be drawn as to the function of the liver. With this in view the authors made blood examinations in intoxications of pregnancy and in puerperal infections. The examinations were made with the ultramicroscope.

In the first case there was marked icterus during pregnancy. After the giving of butter there were immense numbers of hæmokonixæ in the blood which had not been present before; therefore no operation was necessary. The delivery was normal.

The pernicious vomiting of pregnancy was present in the second and third cases. In both cases there



were only a few hæmokoninæ in the blood—two to three in a field; therefore the prognosis was grave. Artificial abortion was performed, followed by rapid recovery.

The fourth case was puerperal infection with icterus. There were no hæmokoninæ in the blood. The patient died. Autopsy showed severe changes in the liver.

In the fifth case there was infection of the amniotic fluid; there was slight icterus, but no hæmokoninæ. Death ensued on the third day. There were marked changes in the liver, which were demonstrable, however, only under the microscope.

Important conclusions can be drawn, therefore, both as to prognosis and treatment from the condition of the hæmokoninæ. Lack of them always indicates severe lesions of the liver.

KNOOP.

### MISCELLANEOUS

**Pinard, A.: Signs and Diagnosis of Normal Uterine Pregnancy during Its First Half** (Signs et diagnostic de la gestation utérine et normale pendant sa première moitié). *Ann. de gynéc. et d'obst.*, 1914, xi, 193.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author discusses the signs of pregnancy that appear in the very beginning and are manifest in the uterus: (1) the cessation of menstruation and (2) the combined examination of the uterus by Puzos' method; (3) pregnancy is very probable when there is ballottement on pressure. He could not demonstrate Hegar's sign in French women without using force in the examination. He believes that the soft parts of the uterus are much more elastic and compressible in German than in French women.

STADLER.

**Franz, R.: The Antiproteolytic Serum Action in Pregnancy, Labor, and the Puerperium, and the Significance of the Antitrypsin Method in the Serological Diagnosis of Pregnancy** (Über die antiproteolytische Serumwirkung in Schwangerschaft, Geburt und Wochenbett und die Bedeutung der Antitrypsinmethode für die serologische Schwangerschaftsdiagnostik). *Arch. f. Gynäk.*, 1914, cii, 579.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author showed in an earlier work that the increase of the antitryptic serum titer is a symptom of pregnancy and the first two weeks of the puerperium. Although these experiments showed that in all probability there is an increase during the course of pregnancy and labor, further experiments were necessary to complete demonstration.

With the aid of the Fuld-Gross method and its modifications by Rosenthal and Pfeifer, Franz tested the blood of 47 women at different periods of pregnancy, labor, and the puerperium. The titer curves show that in the great majority of the cases (33) the titer rises under normal conditions during pregnancy and labor, and gradually sinks again during the puerperium. The rise during labor

occurs during the first and second stages, while even during the third stage it sinks to a value that is almost as low as that at the end of pregnancy. When inflammatory diseases coexist with the pregnancy there may be a further rise. In two cases of eclampsia and one of dermatosis of pregnancy, there was an antitryptic action which was increased over the normal.

The rise in the titer can be used in the diagnosis of pregnancy; it is not specific, however. It is increased in any condition in which there is increased albumin metabolism, such as nephritis, carcinoma, Basedow's disease, fever, suppurative processes, and disease of the adnexa. At present it is not known whether Abderhalden's dialysis is preferable to the antitrypsin method on account of greater specificity.

BENTHIN.

**Abderhalden, E., and Fodor, A.: Further Study of the Presence of Foreign Proteolytic Ferments in the Blood of Pregnant Women; Examination of the Dialysate with Ninhydrin and Determination at the Same Time of Its Nitrogen Content by Means of Micro-Analysis** (Weitere Untersuchungen über das Auftreten blutfremder proteolytischer Fermente im Blute Schwangerer; Untersuchung des Dialysates mittels Ninhydrin und gleichzeitiger Feststellung seines Stickstoffgehaltes mittels Mikroanalyse). *München. med. Wchnschr.*, 1914, lxi, 765.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In this series of experiments the authors determine the catabolism or non-catabolism of placental albumin with sera from different sources, not only with ninhydrin but by determining the nitrogen in the dialysate by Pregl's micro-analytical method. The experiments showed marked agreement in the results from the two methods. Non-pregnant patients almost always showed a somewhat lower nitrogen content in the dialysate. In some cases—cystoma and retroversion—this difference was considerable. The increase of the dialyzable nitrogen containing substances when the serum of pregnant women and placenta is brought together, and the failure of this phenomenon when the serum of non-pregnant persons is used, shows very clearly that in the latter case the placenta is not catabolized. The author believes that Flatow is wrong in his assertion that all sera catabolize placental albumin.

BRAHM.

**Echols, C. M.: Limitations of the Dialysis Method as a Practical Test for Pregnancy.** *J. Am. M. Ass.*, 1914, lxiii, 370.

By Surg., Gynec. & Obst.

The author carried out the dialysis test for pregnancy in 95 women, 70 of whom were known to be pregnant. His results may be briefly summarized as follows:

The pregnant women of the series practically all gave positive reactions; in fact, the last fifty women all gave positive reactions except one, who was about two weeks pregnant, as proved by an abortion two months later. Twelve per cent of the non-pregnant cases gave positive reactions. These included



several just operated on for acute or chronic appendicitis, pus tubes, fibroids, and ovarian cysts.

The dialysis test for pregnancy in its present stage of development is of value chiefly in a negative sense only; that is, if a woman fails to give a positive reaction, she is not pregnant. If, on the other hand, she gives a positive reaction, we can only say she is probably pregnant, for with the present technique from ten to fifteen per cent of non-pregnant persons will give positive reactions.

EDWARD L. CORNELL.

**Leitch, A.: The Serum Diagnosis of Pregnancy and of Cancer; a Critical Study of Abderhalden's Method.** *Brit. M. J.*, 1914, ii, 330.

By Surg., Gynec. & Obst.

The author reports 100 cases tested for carcinoma, in which 51 cases of known cancer gave only 55 per cent positive results, while 49 known non-malignant cases gave 37 per cent positive results. He concludes, therefore, that the method is without diagnostic value.

He believes that the fundamental experiments upon which Abderhalden has based his hypothesis do not cover a sufficiently wide field. He thinks that many of the unexpected false results obtained by numerous workers have not been due, as Abderhalden believes, to improper technique. To demonstrate this point he considers all the errors that may be encountered in dealing with the substrate, the serum, and the dialyzers.

He considers it impossible to render the placenta, cancer-tissue, or other material used as substrate, absolutely free of blood, although Abderhalden requires that this shall be done to make the test successful. He has, moreover, observed that the water in which the substrate has been boiled occasionally gives a positive reaction with a weak solution of ninhydrin, and none with a stronger, and that successive boilings will sometimes develop a filtrate which reacts positively when the previous tests were negative. He is unable to explain these phenomena, but considers that they materially vitiate his results. He has tested 39 sera with such inert substances as sterilized sponge, kaolin, and glass-wool used as substrates, and has obtained 7 marked positive results. This convinces him that it is not so much the serum that splits up the substrate as it is the substrate, acting by virtue of its physical properties, that splits up the serum.

Hæmoglobin-tinted serum is apparently characteristic of some patients and apparently gives a smaller percentage of error than when absolutely clear serum is used. In the great majority of the author's cases the serum was obtained at operation, or about six hours after the last meal. He found, however, that it gave no better results than the serum obtained while the patient was eating, or directly afterward.

The permeability of any single dialyzer was found not to be constant, but to decrease or increase with

use. Consequently, a thimble that had previously given a satisfactory preliminary test might be absolutely useless when employed with a suspected serum. The author believes that the only way to obtain reliable readings is to manifold the tests and controls and strike a just average. In his opinion a single test is worthless.

He concludes that (1) the real fallacies of the test are beyond control, and (2) that the hypothetical fallacies invoked by Abderhalden to account for false results have no basis in fact. F. C. IRVING.

**Engelhorn, E., and Wintz, H.: A New Skin Reaction in Pregnancy** (Über eine neue Hautreaktion in der Schwangerschaft). *München. med. Wchnschr.*, 1914, lxi, 689.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The authors give a report and discussion of the pregnancy reactions published by Abderhalden, Weichardt, and Rosenthal. All these reactions are based on the assumption that during pregnancy a foreign albumin is circulating in the blood of the organism. To demonstrate these hypothetical substances the authors made use of a cutaneous vaccination with an extract of placenta called placentin. The reaction is analogous to von Pirquet's tuberculin reaction and the luetin reaction. All pregnant women reacted positively and all mature non-pregnant individuals negatively. Before menstruation in non-pregnant individuals there was an irritation at the place of vaccination.

MOSBACHER.

**Adam: Eye Changes in Pregnancy and Labor** (Über Augenveränderungen bei Schwangerschaft und Geburt). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 808.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The involvement of the retina in the kidney inflammations of pregnancy is relatively rare. Usually the symptom is the seeing of only a dark spot when looking at a fixed object. With the mirror changes can be seen in the optic nerve and the retina. Complications during pregnancy are detachment of the retina and occlusion of the central artery or vein. The prognosis of albuminuric retinitis with regard to vision in later life is serious. Detachment of the retina has a better prognosis in pregnancy than at other times.

Interruption of pregnancy is justifiable in retinal changes; and it is better to perform it before pronounced changes take place in the retina. If retinitis has begun, the risk to the mother's sight is not so very great if the pregnancy is allowed to continue. The condition is different in uræmia, in which the blindness is a cerebral one. Sudden blindness may occur in eclampsia also; generally it is preceded by a decrease in visual acuity and in color vision. With the mirror no signs of increased intracranial pressure are detected, but in about four per cent of the cases there are extensive hæmorrhages in the choroid and thrombosis of the vessels of the choroid. Caution should be exercised in the



prognosis of these eye changes, both with relation to the severity of the eclampsia and the later disturbances of vision.

FRANKENSTEIN.

**König, H.: Medicolegal and Psychiatric Significance of Menstruation, Pregnancy, and Labor** (Beiträge zur forensisch-psychiatrischen Bedeutung von Menstruation, Gravidität, und Geburt). *Arch. f. Psychiat. u. Nervenkrankh.*, 1914, liii, 685.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

If misdemeanors of any kind are committed by a sexually mature woman, an investigation should be instituted as to the relation in time between the act and her menstrual period. In certain cases it is well to place her under medical observation for one, or better still, several months. In each individual case a decision must be made as to whether her responsibility is decreased or annihilated.

When a crime or misdemeanor is committed by a woman during pregnancy her condition must always be taken into consideration. At this time any predisposition to abnormality may become manifest or be increased in intensity; but even without predisposition tendencies to crime may develop at this time. Here also the degree of responsibility must be decided in each individual case. In crimes committed during labor, twilight conditions due to unconsciousness and excitement or mania must be considered; also stupor or twilight conditions based on hysteria; also such conditions due to eclampsia and epilepsy, as well as delirium from fever and pronounced psychoses. In such cases, when there are any signs of aberration a mental examination should be made.

HANNES.

**Triepel, H.: Determination of the Age of Human Embryos** (Altersbestimmung bei menschlichen Embryonen). *Anat. Anz.*, 1914, xlv, 385.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Triepel agrees with the opinion of Frankel, Villemin, Miller, and others, that ovulation takes place on the average 18 to 19 days after the beginning of the last menstruation; that is, about 2 weeks after the end of the period. On the basis of this research the prevalent ideas of the age of human embryos need correction. In a number of young ova and embryos Triepel tried to determine the age and compare the age by the old method with that by the newly-reckoned term of pregnancy. He worked out a certain relation between the size of the embryo and its age. The formula is  $a = nl$ , in which  $a$  represents the age of the embryo in days,  $l$  the greatest length of the embryo in millimeters, and  $n$  a factor that he has worked out.

GOLDSCHMIDT.

**Schmitz, W.: Icterus Neonatorum** (Untersuchungen zur Pathogenese und Klinik des Icterus neonatorum). *Dissertation*, Giessen, 1913.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In 1911, Heimann made a large number of blood examinations in icterus neonatorum and his results had not been tested since until Opitz advised the author to take up the question again. Serological examination and Arneth's blood count were not

made. The author agrees with Hofmeier's hæmohepatogenous theory of icterus neonatorum. He found the hæmoglobin content, specific gravity, and erythrocyte count below normal, and the more severe the icterus the lower they were. The same was true of the number of white cells, but there was no variation from normal in the proportion of the different kinds of white cells; there was even no decrease in the eosinophile cells.

Children three days old were selected and kept under examination for four days. The results of examination were the same on all four days. The absolute figures for hæmoglobin, specific gravity, and red and white cells were always higher in the normal children than in those with icterus. The severer the icterus the lower the figures. In those with moderate icterus the weight increased from that of normal children, and fell in those with severe icterus. Children with icterus need more nutrition. Nucleated red cells, which are rare in normal children, were more frequently found in those with icterus, often even on the fifth day. Frequent pictures of the blood of icteric children showed greater or less collections of unformed platelets.

FRITZ LOEB.

**Tassius, A.: Gonorrhœal Ophthalmia Neonatorum; Its Prophylaxis and Treatment** (Über Ophthalmoblenorrhœa neonatorum, ihre Prophylaxe und Therapie). *Frauenärztl.*, 1914, xxix, 98.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Macroscopically, cases of ophthalmia neonatorum are very much alike whether caused by gonorrhœa or not; later, in the course of the disease the differences appear which are due to the gonococcus, such as involvement of the cornea, more purulent secretion, etc. The causative agents of non-gonorrhœal ophthalmia are chiefly colon bacilli, staphylococci, streptococci, and pneumococci—the severest cases being due to pneumococcus infection.

The disease generally manifests itself on the sixth to the seventeenth day; the cases that appear on the third to the fifth day are milder, and are effectively treated with 0.1 per cent bichloride solution. It is not always right to regard a late infection as an indirect one; for many times the gonococci are deposited during labor in the meibomian glands where they remain viable for a long time and later reach the conjunctiva with the secretion. Prophylaxis with sterile water is not sufficient; antiseptics must be used. As silver preparations in open containers generally cause a slight catarrh it is best to use Hellendahl's light proof ampoules, as the silver preparations kept in them are practically non-irritating.

EHRENBERG.

**Vollhardt, W.: Is It Possible to Distinguish Maternal and Fœtal Bloods by the Newer Methods**, (Ist die Unterscheidung mütterlichen und fötalen Blutes nach neueren Methoden möglich)? *Zentralbl. f. Gynäk.*, 1914, xxxviii, 720.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The differentiation of maternal from foetal blood may often be decisive in case of suspected murder of



a child after illegitimate birth or criminal abortion. Vollhardt has tried two methods that are very much under discussion at present, and concludes that Abderhalden's pregnancy reaction cannot thus far be used for the purposes of legal medicine. It only gives certain results with fresh serum, but fails in old, non-sterile, and hæmolytic sera and in extracts from blood spots, even when Corin's modification is used, the reliability of which the author could not confirm.

Better and more accurate results are given by Neumann and Herrmann's biochemical method, which, however, is not absolutely reliable, from all points of view. It can only be certainly determined that it is foetal blood when the test is negative, or when there is only a barely perceptible opalescent change in the alcoholic extract. If it is positive, no definite conclusions can be drawn as to whether the blood came from a pregnant or non-pregnant individual, or whether it was a mixture of maternal and foetal blood that flowed together during delivery.

BAYER.

**Deresse, F.: Causes which Prevent Women from Nursing** (Des causes qui empêchent les femmes d'allaiter). *Rev. prat. d'obst. et de pédiat.*, 1914, xxvii, 51.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Statistics are given from Marfan's clinic, 109 cases; Baudelocque's, 500 cases; and Tarnier's, 3,069 cases, in regard to the capacity of women for nursing. Agalactia or hypogalactia occurred in less than 1 per cent of the cases. Of the 80 to 82 per cent of the women who were completely capable of nursing, only 32 per cent nursed their children. In the more prosperous classes, on account of heredity and bodily weakness the incapacity for nursing is greater than among the working classes. The author studied the causes for not nursing in 100 cases at the Baudelocque clinic. In 80 cases the cause was the economic position of the women. In only 20 cases were there psychic or medical reasons why nursing was impossible. Prophylaxis and treatment could have overcome the incapacity in half of these cases. The economic grounds were ignorance in only a few of the cases; in the greater number of cases the work of the women prevented them from nursing their children. Here efforts to further the nursing of the children should be instituted by the establishment of mother's rooms nursing's homes, etc.

LAMERS.

**Parenago, P.: A Placenta Retained in the Abdomen for a Long Time after Extra-Uterine Pregnancy** (Eine nach extrauteriner Gravidität lange in der Bauchhöhle zurückgebliebene Placenta). *Russk. Vrach.*, 1914, xiii, 487.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In January, 1910, a full-term macerated foetus was removed from a patient and it was said that the placenta was removed also. Extra-uterine pregnancy had been diagnosed in the fourth month, but

the patient had refused operation. In December, 1914, the patient came to the author. There was a large fistulous opening in the scar in the midline which was 10 cm. long. The hand could be inserted into the opening. A soft cauliflower-like tumor, the size of a child's head, could be palpated through the fistula. Because of the abundant hæmorrhage the patient was operated on *in extremis*. The tumor was removed and was found, on macroscopic and microscopic examination, to consist of unchanged placental tissue. The patient was discharged cured. The author concludes from this case that in extra-uterine pregnancy the whole placenta should always be removed.

VON HOLST.

**Winter, G.: Significance and Treatment of Retained Fragments of Placenta** (Über Bedeutung und Behandlung retinierter Placentarstücke). *Monatschr. f. Geburtsh. u. Gynäk.*, 1914, xxxix, 597. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

From a study of the work published since the Strassburg Congress, Winter comes to the following conclusions with regard to the significance and treatment of retained bits of placenta. Very frequently the retained fragments of placenta cause no local or general symptoms, and when they do, in the majority of cases it is only local endometritis with necrosis of the fragment of placenta. The retained placenta never of itself causes severe puerperal fever; but it is possible that it furthers the infection that results from direct examination and medical procedures.

The uterus should not be curetted for diagnostic purposes in febrile puerperæ, for it causes disease in one-half to two-thirds of the cases and death in 7 to 9 per cent. Hæmolytic streptococci seem to be especially dangerous. Curettage should never be undertaken for fever, but only for hæmorrhage. Retained pieces of placenta should always be removed immediately after delivery, and during the puerperium in non-febrile cases; also in severe hæmorrhage in spite of fever. If there is no hæmorrhage, ergotin should be given to further the spontaneous discharge of the retained fragments. If this is not successful further treatment should be determined by the result of bacteriological examination. Saprophytes indicate curettage, virulent bacteria contra-indicate it. It should be performed whenever possible with the finger, never with sharp instruments.

KÜSTER.

**Aguillon, L.: The Coxalgic Pelvis, from the Obstetrical Point of View** (Contribution à l'étude clinique des bassins coxalgiques au point de vue obstétrical). *Thèse de doct.*, Algier, 1913. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The coxalgic pelvis does not have any certain, definitely described type, such as Naegele's ankylototic, obliquely contracted pelvis, but shows great variety in its form. In the course of the disease the factors that determine the ultimate form of the pelvis are the acute or slow onset of the disease,

its shorter or longer duration, the degree of the bone changes on the diseased and well side, and finally, the treatment: long-continued immobilization, long-continued extension, immobilization combined with extension, resection followed by pseudarthrosis or ankylosis.

Depending on the degree of each of the above factors and the combination of several of them, there result a number of forms of pelvis, all of which can be classified more or less easily, in one or another of the following three groups: (1) The obliquely contracted coxalgic pelvis with flattening of the diseased side; (2) the obliquely contracted coxalgic pelvis with flattening of the well side; (3) the pelvis symmetrically flattened on both sides. All these forms are pictured and described in detail in the original.

In the clinical diagnosis the author attaches special importance to internal examination and especially röntgenography by Bouchacourt's method, as well as to external pelvic measurements. The prognosis for delivery is not dependent on the coxalgia of itself, but on the kind and degree of pelvic contraction produced by it. It has been growing progressively better of recent years. The pelvic abnormality must be diagnosed before the eighth month of pregnancy.

The following are the methods of choice in treatment: (1) Artificial premature delivery after the eighth month if the true conjugate is over 8.5 cm.; (2) pubiotomy in multiparæ and when the true conjugate is less than 8.5 cm. and more than 7; (3) cæsarean section when the true conjugate is

less than 7 cm. and when no living child has been born at previous deliveries.

Histories of five of the author's own cases are given. Three of them were delivered spontaneously, one left the hospital before delivery, and in one, pubiotomy was performed with good results for mother and child.

LAMERS.

#### Untiloff: Effect of Pituitrin on the Uterus in Vitro

(Zur Frage über die Wirkung des Pituitrins auf die isolierte Gebärmutter). *Festschr. f. Prof. Pobedinsky*, Moscow, 1914.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The rabbit's uterus shows automatic contractions after it is removed from the body, every contraction forming a blunt cone on the curve. Under the influence of pituitrin the waves become higher and the pauses shorter. The effect of pituitrin begins after five to ten minutes, varying with the irritability of the uterus. Generally the character of the contractions is not changed; tetanic contractions appear only in exceptional cases.

There is no difference between the different preparations. Generally a solution of 1:1000 is strong enough. It is possible that weaker solutions would produce a certain effect. The best subject for the experiments is the uterus of a rabbit that has borne young, preferably one which has been delivered within 8 or 10 days. The virginal rabbit's uterus contracts only slightly. The pregnant uterus cannot be used, because contractions may be caused by the movements of the foetus.

JENTTER.



## GENITO-URINARY SURGERY

### KIDNEY AND URETER

Grove, E. H.: A Nervous Symptom in a Case of Nephritis. *J.-Lancet*, 1914, xxxiv, 438.

By Surg., Gynec. & Obst.

Grove's patient, a telephone operator, aged 28, with little of importance in her previous history, was taken sick with headache, nausea, and vomiting. The nausea disappeared but the vomiting continued. She was treated symptomatically by lavage, rectal feeding, and eventually a light diet. Later she was under the care of a chiropractor for two months. During the third month an urinalysis was made and albumin found, the usual treatment being prescribed. In the fourth month, coming under the author's care, the following were the findings of an examination: hæmoglobin, 98 per cent; systolic blood-pressure, 130 mm.; urine, sp. gr. 1028, alkaline, much albumin, no sugar, triple phosphates, hyaline casts; quantity, 1,000 ccm. in twenty-four hours. The usual treatment was again prescribed, plus rest in bed. So long as she kept in bed she was able to retain her food, but when she arose vomiting returned. This vomiting came on soon after eating, preceded by a queer feeling, which was relieved by vomiting, but left her very hungry. Her weight diminished from 145 to 127 pounds.

During the ninth month another examination gave practically the same results. She was again put to bed, and later allowed to be up and about. She was then given Neiswanger's electrical treatment — negative head-breeze and Morton wave-current — during which time she was able to retain most of her meals. When the electrical treatments were discontinued, she admitted vomiting as before, but confessed that she could avoid doing so by exerting all her self-control.

In the discussion that followed, the hysterical aspect of the case was thoroughly considered. It was pointed out that in chronic Bright's disease there are a variety of neurological disorders, both psychic and sensory. Bernard's famous experiment in which he produced albuminuria by irritation of the floor of the fourth ventricle was cited. Emphasis was laid upon the fact that chronic Bright's disease is a toxæmia rather than a disease of the kidneys, and that the brain and nervous tissues as well as the kidneys may be affected, especially in subjects who use their nervous tissues excessively. One observer had noticed in a number of chronic cases of Bright's disease an intoxication so characteristic of Graves' disease that it was not until the urine was analyzed and the blood-pressure taken or the eye-ground examined that the true

nature of the disease was determined. The vomiting in this case was of a cerebral type, and not unlike that present in acute exacerbations of hyperthyroidism.

LOUIS L. TENBROECK.

Tyler, A. F.: Urinary Calculi; Value of the X-Ray in Their Diagnosis. *Urol. & Cutan. Rev.*, 1914, xviii, 345.

By Surg., Gynec. & Obst.

Tyler describes his technique for röntgenologic examination of the urinary tract, which is similar to that generally in vogue. He emphasizes the necessity for careful preparation of patients previous to examination and further calls attention to the so-called "old teakettle bladder," in which there is a deposit over the entire mucosa, of calcareous material — here the plate shows a diffuse shadow over the entire bladder region. He urges the use of the cystoscope for confirmation of findings. Four interesting cases of diagnosis by röntgenologic examination are reported and the following conclusions are reached:

1. The use of the radiograph in the diagnosis of the kidney, ureter, and bladder-stone is painless and should be emphasized in all suspected cases.
2. The X-ray findings are more accurate than those by any other method, there being only one per cent of error under proper technique.
3. The use of the radiograph gives an accurate idea of the location, size, and number of the stones.
4. In badly infected and aged subjects the radiographic method is painless and positive and often does away with the necessity of cystoscopic examination.

J. S. EISENSTAEDT.

Grant, H. H.: The Management of Nephrolithiasis. *Louisville Monh. J.*, 1914, xxi, 73.

By Surg., Gynec. & Obst.

Grant reviews the subject of nephrolithiasis, mentioning the generally discussed and accepted theories connected therewith.

His paper is divided into four sections:

1. How do stones form in the kidney?
2. What damage do they do?
3. How do we know they are there?
4. What is to be done about it?

He believes in an "aseptic" inflammation involving the pelvis and sometimes extending to the interstitial tissue of the kidney as a common result of the irritation due to the presence of stone, which is usually present some time before infection takes place.

He doubts the frequency of ascending infection through the lumen of the ureter but believes it reaches upward along the lymphatics of the ureteral wall and the loose connective tissues adjacent.

When stones are situated in the upper urinary tract, they primarily have their origin in the kidney and migrate from there. They do not form in the ureter.

The real damage to the kidney substance and associated break in health follows sepsis with its resulting renal deficiency and absorption of pus products.

When stone is suspected, a failure of the X-ray to show it should not be accepted as conclusive, but repeated examinations should be made and exploratory operation done if clinical indications point to a kidney lesion.

Operative mortality is high in cases with advanced sepsis and in actual pyelonephritis with multiple abscess the prognosis is dismal — as high as 30 per cent.

Grant favors direct operative approach to the stone, and nephrectomy where the kidney is badly damaged.

FRED R. CHARLTON.

**Schildecker, C. B.: The Post-Operative Treatment of Urinary Lithiasis.** *Tr. Am. Ass. Obst. & Gynec.*, Buffalo, 1914, Sept. By Surg., Gynec. & Obst.

The author believes that too little attention has been paid to the post-operative treatment of urinary lithiasis. The treatment instituted should be based on the chemical character of the stone as determined by an analysis. On this basis a certain dietetic and medicinal régime should be adopted which is best suited to lessen the possibility of the formation of a new stone, or otherwise diminish the tendency of growth of a stone already present. The points covered by the paper were: (1) Kinds of calculi to be considered; (2) chemical methods for analysis of stone; (3) dietetic and medicinal treatment of each variety of stone.

**Buerger, L.: Perirenal Hydronephrosis, Pseudo- or Subcapsular Hydronephrosis.** *Am. J. Surg.*, 1914, xxviii, 266. By Surg., Gynec. & Obst.

Buerger calls attention to the rarity of the condition which ensues when the urinary secretion finds its way under the fibrous capsule of the kidney, and dissects this away from the surface of the organ so that a pseudocyst is formed. To this lesion various names have been given, the most descriptive being perirenal hydronephrosis, pseudohydronephrosis, and subcapsular hydronephrosis. To the 22 cases recorded in literature, the author contributes two that have come under his own observation.

In the first case there existed a congenital obstruction to the urinary outflow in the urethral tract in an infant nine months of age, which was associated with undeveloped infantile kidney together with a hydronephrotic kidney. Upon nephrectomy, a large subcapsular exudation surrounding a hydronephrotic kidney, was revealed. Examination of the specimen demonstrated that a perforation in the attenuated cortical substance of the hydronephrotic kidney had occurred, and through this, urinary extravasation took place under the capsule, dis-

secting this away with the formation of a pseudocyst.

The second case, a boy 14 years of age, had a history of a severe blow in the left upper abdomen and the back, five years previous, followed by repeated attacks of renal colic. After a second traumatism over the same kidney, a severe attack of lumbar pain followed, associated with vomiting and blood in the urine. Nephrectomy showed a large, cystic tumor formed by the accumulation of a urinous exudate under the capsule, a hydronephrotic kidney. The cortical substance presented a ragged perforation, the organ lying free and mobile in the sac.

Briefly, the author's two cases presented the following characteristics: hydronephrosis with marked attenuation of the renal parenchyma in both instances; in one case a distinct history of traumatism. In neither case were the clinical data sufficient to rouse even a suspicion of the exact anatomical lesion.

**Loughnane, F. M.: Renal Sarcoma of Infancy.** *Brit. J. Surg.*, 1914, ii, 77. By Surg., Gynec. & Obst.

The author's report is based upon thirty-five cases (26 autopsies) garnered from the principal London hospitals. In the decade 1901-1911 the death returns from the registrar general's office for cancer of the kidney and suprarenal capsule amounted to 987, of which 430 were under the age of five years, and the balance from five to fifteen years, showing a relatively high ratio in the infant.

**Symptomatology.** The patient appears listless, pale, and emaciated in spite of the large abdomen, which is oftentimes the first noticeable symptom. Pain in the loin or back was noted in only 8 of the 35 cases. Fever ranging from 99 to 101 degrees was the rule, as is common in rapid sarcoma. A mild leucocytosis was observed in a few cases, and a cough, probably coincident with lung metastasis.

**Urinalysis.** In the 37 cases hæmaturia occurred in 7 while under observation, and in 4 additional cases a history of hæmaturia was obtained. Either hæmaturia or albuminuria was present in 10 cases. In adults, on the contrary, hæmaturia occurs in 90 per cent and, as an initial symptom, in 70 per cent. The newer renal tests depend for their interpretation upon the relative output or findings in one kidney as contrasted against the other, and so are of no value in infants. Seventy-two per cent of the infant cases derive no benefit from urinalysis.

**Pathology.** In the 35 cases the disease was on the left side in 17, on the right in 13, bilateral in one, unrecorded in 4. Metastasis occurred in the liver in 4, omentum twice, glands 3 times, and lungs twice. In Jacobi's 40 cases lesion was right-sided in 18, left-sided in 19, bilateral in 8. The tumor consists of a variety of sarcomatous elements (spindle or round-celled) with cuboidal and other renal parenchyma. Muscle-cells (normally found in the kidney capsule and in the foetus around the



collecting tubules), cartilage and epithelial pearls, and ganglion cells are also occasionally found. These structures are very rarely true teratomata, but more frequently teratoid, the result of metaplasia (Adami). The epiblastic elements are generally limited by their basement membrane.

**Prognosis.** Eighty per cent are said to have had recurrences, 70 per cent the first year. The immediate operative mortality was 7.7 per cent, a reduction from 76 per cent in 1885. Out of 12 nephrectomies, 2 died in six months from recurrence, 1 in 3 months from phthisis, 2 were alive and healthy 18 months afterwards. Four survived 3 years and in 3 cases the results were unknown.

LOUIS L. TENBROECK.

**Eisendrath, D. N.: The Clinical Aspects of Renal Infection.** *Interst. M. J.*, 1914, xxi, 764.

By Surg., Gynec. & Obst.

The writer says that in many cases of renal infection, the local signs are completely overlooked because of the general symptoms of septic intoxication. Many cases are masked by the pseudomalarial chills and fever, or a typhoid-like course of temperature; and tenderness and other symptoms of renal infection are so indistinct that the kidney is not considered as the source of the obscure fever.

The most reliable clinical evidences are obtained by the use of the cystoscope, the ureteral catheter and the X-ray. Tenderness over the kidney may be elicited either by bimanual palpation or by palpation at the costovertebral angle. Pelvic lavage is of more assistance in the chronic cases than in acute infection of the renal pelvis.

Infection of the kidney may take place by one or more of four routes, or by a combination of several routes. The first, the hæmatogenous or blood route; second, the urogenous, along the interior of the ureter, where the micro-organisms migrate up in the stagnant column of urine into the pelvis of the kidney; third, the lymphogenous route; i. e., from the lymphatics of the bladder to those of the ureter and up along the latter to the pelvis and into the lymphatics of the kidney; and fourth, by way of the connection of the lymphatics of the colon with those of the ureter.

Many cases of renal infection are dependent upon the presence of a calculus blocking the ureter. The re-formation of renal calculi is not infrequent and must be considered in giving the prognosis of any case in which a stone has been removed. Calculi are apt to re-form as long as an infection is present, since such kidneys are often the seat of a chronic colon bacillus infection.

If the opposite kidney can functionate for both, primary nephrectomy is to be preferred to a conservative method in advanced cases of renal infection, but conservatism should be the rule in all cases except those of the hyperacute type; in these, nephrectomy should be performed as early as possible, while in the acute form, the conservative methods should first be tried.

**Peacock, A. H.: A Study of Twenty Cases of Renal Tuberculosis.** *Northwest Med.*, 1914, vi, 205.

By Surg., Gynec. & Obst.

The possibilities of the present-day exactness in the diagnosis of kidney tuberculosis is touched upon by Peacock, brief histories of twenty cases being shown, part of which were proven operative and part non-operative. He considers that the cases practically always come late to the genito-urinary surgeon because of the primarily misunderstood cystitis treatment by the practitioner. The claim is made that renal tuberculosis is always secondary to a focus elsewhere in the body and that attention should be directed to the primary focus as well as the secondary kidney focus in the diagnosis and treatment of the case.

After studying these twenty cases, Peacock is impressed with the following findings:

The tubercle bacillus was found in the urine in 19 out of the 20 cases.

Hæmaturia, which usually occurred early, appeared in 60 per cent.

The sexes are about equal: 11 males and 9 females.

The average age was 26; the youngest case being 14 years of age; the oldest 43.

In 65 per cent of the cases the primary lesion was found outside the kidneys in the examination.

In 60 per cent a bilateral infection was proven. In these bilateral cases he considers that the presence of one competent kidney should be assured before nephrectomy is done, because of the great danger of the remaining kidney's destruction later.

C. E. BARNETT.

**Deaderick, W. H.: The Tests of Renal Function.**

*J. Ark. M. Soc.*, 1914, xi, 47.

By Surg., Gynec. & Obst.

The author gives a well-ordered review, historical and technical, of all the commonly recognized excretory and retention tests of renal functional activity. His conclusions are as follows:

1. The phenolsulphonephthalein test is simpler than other functional tests, and the drug is non-irritating and non-toxic.

2. The total amount of work of both kidneys is accurately shown by delay and diminution of excretion.

3. The relative efficiency of each kidney is determined by analysis of the segregated urines.

4. The test is of great importance in cardiorenal disease by indicating the organ most at fault.

5. Valuable prognostic data may be gathered by the application of this test.

6. Absolute reliance should not be placed upon any functional renal test, results should be correlated with clinical findings. H. W. PLAGGEMEYER.

**Keene, F. E., and Pancoast, H. K.: The Present Status of Pyelography.** *J. Am. M. Ass.*, 1914, lxiii, 523.

By Surg., Gynec. & Obst.

In order to avoid untoward results of collargol injection, the authors recommend that the greatest



care be used regarding asepsis. The ureteral catheter should not exceed No. 6 in size, should be smooth of surface, pliable, and not stiletted. The catheter is inserted 20 cm. and its further progress made slowly until the slightest buckling occurs, when it is withdrawn 1 to 2 cm., and the urinary outflow examined, to determine, if possible, the presence or absence of pelvic dilatation.

The catheter is then withdrawn 10 cm. and the injection made. If the urine is blood-stained, the injection is deferred for seven days. When an obstruction is encountered along the ureter, forcible attempts to overcome it are not made; a smaller catheter is used, and if its passage is likewise impeded, collargol is injected, and in the majority of cases will find its way upward.

The authors are opposed to simultaneous injection of both kidneys. The collargol is freshly prepared for each case and varies from 5 to 10 per cent, depending upon the thickness of the abdominal walls. In making the injection they use a 30 ccm. burette connected with a short tube and stopcock. To start the flow, the burette is elevated three feet, but is immediately lowered and the fluid allowed to flow in at an elevation of not more than one foot with a No. 6 and two feet with a No. 5 catheter. The injection is discontinued when the column of collargol ceases to fall, or the patient experiences the slightest sensation of fullness in the kidney region. After the picture is taken, the collargol is drained off and the catheter removed. When retention from angulation of the ureter due to ptosis is suspected, the patient is required to remain in bed twelve hours after the injection. This facilitates free drainage of any collargol that may remain in the pelvis of the kidney.

Pyelography should be employed only after the usual methods have failed. The authors are opposed to its use in depicting interesting anomalies and to its indiscriminate use in all types of renal pathology.

The pyelograph is useful in detecting the earlier stages of hydronephrosis due to mechanical blocking of the ureter other than that caused by a stone; also in horseshoe and dysplastic kidney, and in rendering a calculus sufficiently opaque to cast a perceptible shadow when it was not detected by the simple roentgenoscopy alone. HARRY A. KRAUS.

**Ferguson, S. W.: Pyelitis in Infancy.** *Med. J. Austral.*, 1914, i, 105. By Surg., Gynec. & Obst.

The author's report, which is based on a series of 45 cases, all of which occurred in females, is at variance with some of the recent articles in which large numbers of cases occurring in boys have been reported.

In regard to the mode of infection, the author believes the evidence points to an ascending infection from the urethra. The factors speaking for this are its frequency in the female, its usual appearance during the napkin period, and the fact that in a large percentage of the cases the symptoms

of pyelitis are preceded by definite intestinal disturbances and frequent motions.

The author was able to obtain the usual history of intestinal disturbance in his series of cases. One of the important points brought out in this paper is the statement that no examination of a febrile child is complete, when no cause for the rise in temperature is found, without a microscopic examination of the urine. Attention is also called to the fact that there are seldom any symptoms pointing to an involvement of the urinary tract. He believes that in some of the cases the incidence of the toxin falls on the nervous system, and he further states that head retraction and Kernig's sign may sometimes be present.

In the treatment of these cases the author is in favor of the alkaline treatment, relying generally on either sodium or potassium citrate. When he administers urotropine, he gives it in association with the acid phosphate of sodium or ammonia benzoate and diluted with large quantities of water. The author does not enter into a detailed discussion of vaccine treatment, as he believes vaccines are rarely necessary but may be of value in a case in which the condition has been unrecognized for a long time, or in prolonged cases to supplement the alkaline treatment. The histories of the two fatal cases in his series are given.

HERMAN L. KRETSCHMER.

**Pennock, W. J.: Chronic Pyelitis.** *Northwest Med.*, 1914, vi, 202. By Surg., Gynec. & Obst.

The usual signs and symptoms for diagnosing non-tubercular pyelitis are discussed. Pennock considers the following findings essential for a diagnosis: An approximately normal amount of urine should be secured from either kidney with a normal specific gravity from each; with a normal urea excretion phthalein should appear at the normal time followed by a normal quantitative excretion in a given time and the urine from one or both kidneys should contain pus.

Pelvic lavage with a strong solution of silver nitrate is advocated in the treatment. One case of gonorrhœal pyelitis was cited in which a ten per cent collargol pyelography proved sufficient to eradicate the infection. C. E. BARNETT.

**Woolsey, G.: Some Problems in the Surgery of the Kidney.** *Am. J. Surg.*, 1914, xxviii, 203. By Surg., Gynec. & Obst.

In a general survey of the entire field of kidney surgery Woolsey arrives at several clearly stated conclusions. The kidney is injured subparietally more frequently than any other organ, but the cortical laceration does not cause urinary extravasation. This only accompanies rupture of the pelvis or calices.

He treats cases expectantly except those presenting a severe clinical picture, or those in which there exists an infection of the lower urinary tract.

As a rule, bullet wounds require operation, inas-



much as the peritoneal cavity is usually invaded. Lumbar drainage is always advisable.

Any other treatment than surgical is a failure in tuberculosis of the kidney. The author believes that tuberculin is a waste of time and that climatic treatment gives an enormous mortality. He quotes Wildbolz, who reported 316 cases treated non-surgically in Switzerland. Only ten per cent lived over five years, only five per cent had no symptoms over five years, and only one case was well in every respect.

But few, if any, specimens of healed tuberculous kidney are found, while they should be not uncommon if spontaneous recovery is common.

He does not believe that partial nephrectomy is ever permissible.

The X-ray, while now an indispensable adjunct to diagnosis, often fails to reveal stones. In one case a bladder-stone, one and one-half inches in diameter, was determined by cystoscopy where the X-ray failed utterly to show a shadow.

Differentiation between appendiceal and renal conditions will depend largely on clinical symptoms. There is a tendency toward neglecting this phase of study. Every diagnostic agency, such as the X-ray and urinary studies, should be resorted to before the operative procedure is determined upon.

He has used the transverse incision of the kidney for the removal of stone, believing that it damages less kidney tissue than the longitudinal.

FRED R. CHARLTON.

**Zondek, H.: Experiments in the Decapsulation of the Kidney in Rabbits with Bichloride Nephritis** (Experimentelles zur Dekapsulation der Niere bei sublimatvergifteten Kaninchen). *Ztschr. f. d. ges. exp. Med.*, 1914, iii, 122.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Harrison recommended nephrotomy for the decrease of intrarenal pressure and its sequelæ, but Edebohl substituted for it the less dangerous decapsulation. This operation has been used not only in scarlet fever nephritis and puerperal eclampsia, but in acute forms of nephritis and in angioneurotic hæmorrhage of the kidneys. A considerable number of authors have had excellent results from it. Zondek used the method, experimentally, in kidneys congested by torsion or pressure on the pedicle, and found that decapsulation of the acutely swollen kidney caused a decrease in the intrarenal pressure. The discharge of drops of blood and serous fluid observed on decapsulation he called "bleeding the veins and lymphatics." Then he undertook a study of the effect of decapsulation on kidneys not artificially swollen. Bichloride seemed to him the best agent for producing the kidney lesions, as the swollen condition of the kidney produced by bichloride poisoning is very similar to that produced by the toxins of various bacteria — cholera bacillus, colon bacillus, tubercle bacillus, pneumococcus, and diphtheria bacillus. The highest dose was 1 cg., the lowest 2 mg. of bichloride.

As experimental and control animals, he used rabbits with an average weight of 1 kg. He found on extirpating the kidneys during life that the decapsulated kidney weighed 0.7 to 4.6 gms. more than the non-decapsulated one. The differences in weight are about proportional to the amount of bichloride injected and the time of its action before the extirpation of the kidneys. Though the non-decapsulated kidney contained more blood than normal, its blood content was small as compared with that of the decapsulated kidney. The differences in weight disappeared in animals that died spontaneously "when the motor that drives the blood into the kidney" was excluded. Microscopic examination showed that increase in the size of the parenchyma cells was not responsible for the increase in weight. Therapeutically, decapsulation of the kidney not only decreases intrarenal pressure but also gives the best opportunity for a more complete irrigation of the kidney with blood, and for abundant diuresis.

SAXINGER.

**Guerry, L.: Injury of the Vena Cava during Nephrectomy.** *J. S. Car. M. Ass.*, 1914, x, 576.

By Surg., Gynec. & Obst.

In the removal of three large pyonephrotic tumors, one of which contained a large calculus, Guerry accidentally included a portion of the vena cava when the stump was clamped *en masse* and severed. Clamps were applied to the breach in the cava, which entirely controlled the hæmorrhage. They were loosened the seventh day and removed on the eighth day. All three cases recovered and, with the exception of the second case, no evidence was present to indicate, by œdema, that a block had occurred in the vena cava.

In reviewing the history, the author found 20 cases in which 7 were controlled by the clamp method, while the others had either ligatures or sutures applied.

A case from Peltesohn describes the suture of the vena cava following the removal of a kidney cancer. The patient recovered, free from acute symptoms, showing perfect permeability of the cava.

An interesting case is reported from Delanuy, in which the vena cava was entirely severed during the removal of a tubercular kidney. Ligatures were placed around both above and below the cava. Œdema, while present, was not marked. Collateral circulation occurred through the reno-mammary, renoazygo-lumbar, and utero-ovarian (Robinson's) circle. Recovery progressed perfectly. The re-establishing of the utero-ovarian circulation rekindled a uterus that was in a quiescent menopause into a renewed menstruation. C. E. BARNETT.

**Butler, F. A.: A Case of Primary Carcinoma of the Ureter with "Sciatica."** *Clifton M. Bull.*, 1914, ii, 48.

By Surg., Gynec. & Obst.

The patient, a bookkeeper, aged 53, was admitted to the sanitarium October 14, 1913, complaining of sciatica. His father died at 78 of cancer of the stomach. The patient had always had good health



until 19 months before, when his present illness began with an attack of hæmaturia lasting one week. Twelve months later he had a second similar attack. There was no pain, passage of gravel, or other symptoms suggesting renal colic. A few months later the patient had incontinence of urine for relief of which an intra-urethral operation was performed in April, 1913. This was followed by painful urination and a swelling of the right testicle. At this time he was told there was sugar in his urine, and a diabetic diet was prescribed.

The present back-pain had been troubling him for five months. There was a marked tenderness over the right sacro-iliac articulation and constant pain in the region of the right sciatic notch, radiating into the right groin and down the outer aspect of the thigh, where it was most severe and constant.

There was no history of trauma. The pain had had a gradual onset and had become continually more severe, requiring on an average two grains of morphia daily. He was pale and emaciated and in nineteen months had decreased in weight from 176 lbs. to 125 lbs. His skin was lax and flaccid; his tongue presented a thick dark-brown coat; his breath was foul and his throat somewhat reddened; the pupillary reaction was normal. The temperature varied from 97° to 99.5°, pulse 80 to 100, respiration 20 to 25.

There was no glandular enlargement, and the heart and lungs were normal. Abdominal palpation revealed a firm, smooth, rounded, non-tender immovable mass about three inches in diameter just to the right of the umbilicus.

The right testicle was symmetrically enlarged to three or four times the normal size. Rectal examination was negative.

The urine contained a few hyaline casts and a slight trace of albumen. There was no evidence of intestinal obstruction. The stools showed no blood. Blood-pressure was normal. Hæmoglobin 78, white count 11,000, red count 4,544,000, differential normal. X-ray examination of the sacro-iliac region was negative. Sigmoidoscopy was negative. Cystoscopy revealed no abnormality of the bladder, but on ureter catheterization the right ureter was found to be obstructed 6 cm. from the orifice. Washings obtained by the injection of boracic acid solution were stained for tubercle bacilli with negative results. Von Pirquet test was negative. The phenolsulphonephthalein test resulted in the appearance of the dye from the left ureter in eight minutes, but none from the right — 21 per cent was recovered the first hour and 45 per cent in two hours. A preliminary diagnosis of sarcoma of the right ileum was made. The hæmaturia and right ureter obstruction were explained as being due to infiltration of the ureter from without.

A preliminary operation was performed November 22d. A tumor palpated just posterior to and below the right kidney, seeming to spread over the anterior surface of the sacrum and ileum. It was quite extensive and firm but not of bony consistence.

A specimen was excised for examination. The pathologist reported it to be carcinomatous.

The result of the operation and pathological findings, added to the previous findings, led to a diagnosis of "primary carcinoma of the right ureter."

The patient made a good recovery, the abdominal incision healing rapidly. Pain was markedly decreased, requiring only one-quarter grain of morphia daily. On December 12th the right testicle was removed, its involvement being regarded as metastatic. The tumor was found to contain only normal tissue. The patient declined rapidly and died December 29th.

Autopsy revealed an extensive mass of carcinomatous tissue obliterating the central half of the right ureter, infiltrating the psoas and iliac muscles, the posterior peritoneum, the nerves of the lumbar plexus, and the perirenal tissue. The right kidney was atrophic and not involved. The left kidney was normal. There were no metastases in any of the organs. The neoplastic tissue extended by continuity down the right ureter within 6 cm. of the bladder orifice. This tissue was separated by a strip of normal ureter, 4 cm. in length, from a mass of carcinomatous tissue which had entirely infiltrated the lowest 2 cm. of the ureter and was invaginated to the extent of 1 mm. into the bladder.

The scarcity of literature on the subject is noted. The seven cases collected by Metcalf and Safford are said to be the only cases in literature to date.

In the reports of six cases of primary carcinoma of the ureter by Rundle, Albarran, Uvelcker, Hecktaen, Wissing and Blix, Rokitanski and Halle, the symptoms and findings were essentially similar to those in this case, namely, hæmaturia dissociated from pyuria, pain largely sacral, presence of tumor and ureteral obstruction.

H. G. HAMER.

#### BLADDER, URETHRA, AND PENIS

**Pike, J. B.: Perforation of the Bladder from Chronic Ulceration with Secondary Appendicitis.** *Practitioner*, Lond., 1914, xciii, 292.

By Surg., Gynec. & Obst.

The author reports a rare case of perforation of the bladder complicated with appendicitis. The patient, a deaf-mute 73 years old, was admitted to the hospital on account of abdominal pain and a lump in the right iliac fossa.

An operation for appendicitis was made on the day of admission. On incision of the peritoneum dense adhesions were found around the cæcum, and while these were being separated a small stream of clear fluid, which proved subsequently to be urine, issued from the wound. The appendix was found to be very large and in a mass of adhesions; the stump was buried and a large drainage tube inserted.

The patient lived nine days after the operation, during which time he passed no water naturally, catheterization being difficult.

The post-mortem findings were: Bladder deep



in the pelvis, thickened and contracted, small star-shaped calculus in the bladder, which had caused ulceration through the mucous and muscular coats of the bladder, its peritoneal covering being distended into a long peritoneal cyst, which had ruptured when the attempt was made to separate the adhesions.

THEO. DROZDOWITZ.

### GENITAL ORGANS

**Corner, E. M.: Further Experiences of the Treatment of Imperfectly Descended Testicles.**  
*Am. J. M. Sc.*, 1914, cxlviii, 51.

By Surg., Gynec. & Obst.

Corner refers to his paper published in the British Medical Journal in June, 1904, in which he discussed the advisability and value of the operations performed for relief of undescended testicle, and in this paper makes a summary of his experiences since then.

First, he advises that there need be no particular hurry to perform this operation, except under certain conditions, viz., (1) the recognition of a hernia accompanying the imperfect descent, or (2) the recognition that the imperfect descent is not mere belatedness.

He emphasizes the fact that in separating the sac from the cord in cases of hernia accompanying undescended testicle, great care must be taken not to injure the blood-vessels on account of the subsequent danger to the nutrition of the testicle.

He claims that it is not, as a general rule, imperative to operate before the age of seven years. He says the operation may be done in one of three ways:

1. The accompanying hernial sac may be divided and stripped of the cord, allowing the testicle to descend into the scrotum. Any but the mildest scrotal fixation is merely a prelude to failure, anatomical or physiological. Such an operation is called an orchidoplasty or an orchidopexy.

2. The gland may be removed as advocated by many. This line of treatment is especially indicated when the imperfect descent is unilateral. It is satisfactory in its after-results. The operation is an orchidectomy.

3. Especially when the condition is bilateral, the gland may be returned to the abdomen, intraperitoneally. Any internal secretion which the gland may have, which will aid the patient to develop sexual character, such as hair on the face, male voice, male body, energy of mind and body, is retained. Such an operation is an orchidocelioplasty.

In suitable cases the author seems to favor the returning of the testicle to the abdomen and gives the following principles favoring this procedure:

1. It has been urged on theoretical grounds that the returned testicles are prone to become malignant. This is not so.

2. It has been urged that in the intra-abdominal position such common diseases as gonorrhoeal orchitis endanger life. This is not so.

3. Apparently the intra-abdominal position abolishes any external secretion, but preserves and encourages the internal secretion; an important point, as it is in the internal secretion above, that practically the whole value of the imperfectly descended testicle lies.

The author tabulates his results as follows: Orchidopexy, about 10 per cent; orchidocelioplasty, about 50 per cent; orchidoplasty, 40 per cent.

He draws the conclusion that orchidopexy fails more frequently from atrophy of the glands than by not retaining that gland in good position.

At birth and up to the age of about five years, the case should be watched to decide whether the testicle is merely late in its descent or not. If a hernia is seen to be present, an operation should be performed, followed by an orchidoplasty.

From seven to twenty years of age an operation should be done whether a hernia is present or not. An orchidoplasty, an orchidectomy, or an orchidocelioplasty should be done.

Above twenty years of age an orchidectomy should be done.

A. C. STOKES.

**Lydston, G. F.: Transplantation of a Testicle from the Dead to the Living Body.** *N. Y. M. J.*, 1914, c, 67.

By Surg., Gynec. & Obst.

Lydston lays down the proposition that various skin diseases, notably psoriasis, are a promising field for the therapeutic administration of the sex gland hormone by way of implantation. He continues the discussion on the proposition that these diseases are primarily an aberration of quality and quantity of internal secretion, and, therefore, that implantation may be benefited by implantation of sex glands.

He states that a paper will shortly appear in the New York Medical Journal in which he will suggest that arteriosclerosis, chronic renal disease, diabetes, tuberculosis, and even carcinoma may be aided by this kind of a transplantation.

He cites a case in which he transplanted an entire testicle into the scrotum of a man who had large patches of psoriasis on his back and arm. This testicle was obtained from a dead man thirty hours after death and transplanted ten hours afterward. The lesions on the arm and back disappeared at the end of eight days.

The author wishes to submit without comment this brief preliminary report of the result of the primary, or initial, dose of sex hormone and promises a more complete discussion in the future.

A. C. STOKES.

# SURGERY OF THE EYE AND EAR

## EYE

**Fowler, W. W.: Ophthalmia Neonatorum.** *Tex. M. News*, 1914, xxiii, 737. By Surg., Gynec. & Obst.

The author refers only to ophthalmia neonatorum of Gram negative gonococci. The disease breaks out three to five days after birth; if it breaks out after that time it is probably due to extragenital influences.

He urges that care be used in opening the child's eyes for examination, as the pus under pressure may spurt into the physician's eyes with dire results.

The most feared complication is ulcer of the cornea with subsequent perforation; and its severe effects on the eye frequently result in blindness.

Statistics show that the instillation of 2 per cent silver nitrate in the eye at birth positively cuts this disease to the minimum.

The author objects to the use of boracic acid, because of its irritating acid properties; instead he uses a one per cent baborate of soda solution. He instills 10 per cent argyrol every 15 minutes for 36 to 48 hours. He condemns the rough handling of the lids as having a tendency to start fatal ulcers. He also opposes the use of hot and cold applications, as he thinks they do no good and may do harm.

S. S. QUITTNER.

**Holloway, T. B.: Peripheral Pigmentation of the Cornea, Associated with Symptoms Simulating Multiple Sclerosis.** *Am. J. M. Sc.*, 1914, cxlviii, 235. By Surg., Gynec. & Obst.

The author reports a case of peripheral pigmentation of each cornea, the symptoms of the patient warranting a diagnosis of multiple sclerosis. He cites other cases by Kayser, 1902; Fleisher, 1909; Volsch, 1911.

Holloway had his patient thoroughly examined for a probable cause of the pigmentation, in conjunction with his symptoms. His conjectures—cirrhosis of the liver, and a tremor affecting the extremities and head—may be an incentive to the investigator to look for a peripheral pigmentation of the cornea.

L. J. GOLDBACH.

**Harkness, C. A.: Convergent Squint, and Its Treatment.** *Clinique*, Chicago, 1914, xxxv, 442. By Surg., Gynec. & Obst.

Convergent squint usually appears in childhood. The causes are weakening of the external rectus due to debilitating disease, incorrect attachment of muscles, peripheral paralysis, central lesions, and amblyopia.

Treatment is divided into two classes—operative and non-operative. Of the operative, either simple

tenotomy of the internal rectus or tenotomy with advancement of the external rectus is to be preferred. Of the non-operative methods early and correct placing of glasses usually cures. The use of prisms and exercising of muscles alone is to be condemned.

In conclusion, Harkness emphasizes the importance of eradicating the false impression that children will outgrow squint without proper treatment. Early wearing of correctly fitted glasses will not only correct but will save vision. Surgical means should be used as a last resort.

S. S. QUITTNER.

**Mosher, H. P.: The Orbital Approach to the Cavernous Sinus.** *Laryngoscope*, 1914, xxiv, 709. By Surg., Gynec. & Obst.

With this plan of operation, the globe of the eye is removed and the orbit cleaned out. The ophthalmic artery is then tied off, the periosteum cleaned from the posterior half of the floor of the orbit, and the groove recognized in which the superior maxillary nerve runs. The next step is to separate the periosteum of the orbital surface of the great wing of the sphenoid and recognize the outer end of the sphenoidal fissure. With the chisel placed vertically, a cut is made through the orbital plate of the great wing of the sphenoid from the notch of the superior maxillary nerve to the outer end of the sphenoidal fissure above. The bone here is thin and easily removed. With the rongeur or the chisel an enlargement is made, outward one and one-half centimeters, and a window is made flush with the floor of the orbit. (Important) The dura is then elevated from the floor of the middle fossa, working from the outer boundary of the bone-window inward.

On the cadaver the dura can be separated from the outer wall of the cavernous sinus for a distance backwards of about a centimeter—then separation becomes hard. If the elevation is persisted in, a pin head opening is torn in the outer wall of the sinus at the level of the bottom of the bone-window. Above and beyond this point of adhesion between the outer wall of the sinus and dura the two can be separated for about a centimeter further, where the ophthalmic division of the fifth nerve from the gasserian ganglion halts the separation. If an attempt is made to separate the inner wall of the sinus from the outer wall of the sphenoid bone, the knife may have to be used to start the operation, but once started it is easily carried back to the limit of the sinus. Experimentation shows that the exposure of the outer wall of the sinus is the better and preferred procedure. One centimeter then being exposed, a blunt-pointed knife is placed against the outer wall of the sinus on a level with the floor of the orbit.



The blade is carried forward to the body of the sphenoid until it is stopped by bone. This opens the wall of the sinus for one centimeter and the opening is well below the internal carotid. A small curette could then be carried back through the whole body of the sinus, the distance being about three to four and one-fourth inches from the rim of the orbit.

S. S. QUITTNER.

#### EAR

**Coates, G. M.: Bacterins in the Treatment of Diseases of the Ear.** *Laryngoscope*, 1914, xxiv, 677.  
By Surg., Gynec. & Obst.

Since first brought out by Wright, bacterin therapy has been used in attempts to cure diseases of the ear, just as it has been tried for every other ailment of infectious origin. A résumé of the work done in this direction during the past four years as shown by reports of Levy, Graef, and Wynkoop, Dwyer, Still, MacDonald, Huvelle, Christie, Sherman, West, McKernon, and Kolmer and Weston, indicates a fair amount of success in the use of bacterins in suppurative middle ear disease, furunculosis, and chronic eczema of the external canal. The most important works quoted, however, were those of Nagle, of Boston: papers read before the American Laryngological, Rhinological, and Otological Society in 1910 and the Ninth International Otological Congress in 1912. In these two papers sixty-five cases of chronic suppurative otitis media were reported with practically but one failure.

The author gives his own experience as follows, dividing his cases into acute and chronic, and again into those treated with autogenous and with mixed commercial bacterins. In the former class there were five cases of acute suppurative otitis media, and all cleared up promptly with autogenous vaccines, although there were marked mastoid symptoms in each. Attention is called to the fact that very possibly these cases would have recovered just as promptly with other methods of treatment, although they had all resisted up to the time that the vaccines were administered and after that promptly convalesced.

In chronic middle ear suppuration five cases were treated with autogenous vaccines, with three apparently cured and two improved. An attempt was made to ascertain the value of mixed commercial bacterins, and the conditions were made as hard as possible in order to see what could be accomplished by the physician who was without laboratory assistance. Therefore no cultures were made to determine the organism, no other treatment was used, and the dosage was regulated by clinical observation.

The Social Service Department of the Hospital insured regular attendance for treatment and for verification of results. There were no serious complications observed and but little local or general reaction as a rule. Treatments were given at from two to four day intervals and the dosage was usually doubled at the second and third visits. Sixty-

three cases were treated, and of these 56 were apparently cured; i. e., the ears became dry and remained so up to the time of the report, varying periods up to six months. Two cases were improved only and five were unsatisfactory. In this series of 63 cases 17 were acute or subacute and 46 were chronic and had resisted all other methods of treatment short of the radical operation. It was in the latter class that the 5 failures were recorded.

The author concludes that, while there is yet much work to be done in this line, bacterin therapy in diseases of the ear is a distinct addition to the armamentarium of the otologist for combating these diseases.

**Lutz, S. H.: How the Patient Can Help Himself in Cases of Chronic Catarrhal Otitis Media.** *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxiii, 377.  
By Surg., Gynec. & Obst.

In the study and treatment of cases of chronic catarrhal otitis media, it is necessary to bear in mind the importance of a consideration in detail of the general condition of the patient, as well as the local condition of the nose and nasopharynx.

It is of paramount importance to instruct these patients how to clear the nasopharynx, and blow the nose without causing a rarefaction or pressure of the air in the nasopharynx, and thus cause a disturbance of the air-pressure on the membrana tympani.

ELLEN J. PATTERSON.

**Wilson, W.: Two Unusual Cases of Mastoiditis in Children.** *Brit. M. J.*, 1914, ii, 398.

By Surg., Gynec. & Obst.

The case is reported of a child, two years of age, who had a sudden attack of mastoid pain with slight oedema above and behind the auricle, normal membrana tympani, but with no marked constitutional symptoms. At operation three days after the onset, a subperiosteal abscess was found communicating with the antrum through a fistula in the outer antral wall. The superficial air-cells of the squamosa were, to a great extent, infiltrated with pus, but there were no signs of middle ear suppuration.

Another child eight years of age, recovering from pertussis, developed slight unilateral mastoid oedema; there was thin watery pus in the external meatus with no perforation in the membrana tympani, though the external canal was sodden. There were no severe constitutional symptoms and no indications of intracerebral involvement. At operation, no pus was found in the antrum or middle ear; the lateral sinus was normal; but upon opening the posterior fossa through the antral wall, the tense wall of an abscess was perforated and two ounces of thick white pus was liberated.

Recovery was rapid. No pus in the antrum or perforation in the membrana tympani ever developed.

The author's theory is that the whole tract from the membrana tympani to the dura was simultane-



ously affected by an acute infection, which spread by the lymphatics around the veins to the posterior fossa and was there cut off from the surface by lymphangitis occurring in the bony channel.

ELLEN J. PATTERSON.

**Kopetzky, S.: A Case of Latent Mastoiditis Complicated by Toxic and Irritative Cerebral Symptoms, Accompanied by Blindness and a Streptococcaemia Caused by Trauma.** *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxiii, 391.

By Surg., Gynec. & Obst.

Kopetzky reports the case of a woman, 27 years of age, who after receiving a slight blow over the left supra-orbital region developed severe headache, slight elevation of temperature, and delirium. Upon admission, three weeks later, there was a small erythematous, punctate rash on the outer surface of both thighs; there was no rigidity of the neck, no Kernig sign, and no loss of power of the hands or legs; optic neuritis was more marked on the right; there was ptosis of the left eyelid; the reflexes were diminished on the right side. Babinski's sign was present on the right; the ears were negative; the Wassermann test was negative; blood-culture showed a streptococcus mucosus; lumbar puncture showed cerebrospinal fluid under pressure; the patient was confused and had partial blindness.

A streptococci vaccine was administered intravenously. Exploration of the frontal lobe was negative, but at the dressing on the fourth day a discharge from the left ear showed the same organism as was found in the blood.

A radical mastoid showed eburnized bone and no gross evidence of pus, the dura was normal, and the temperosphenoidal lobe negative. Recovery was uneventful.

ELLEN J. PATTERSON.

**Danziger, E.: Diffuse Serous Labyrinthitis Complicating Acute Purulent Otitis Media.** *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxiii, 406.

By Surg., Gynec. & Obst.

The author reports three cases of diffuse serous labyrinthitis complicating acute purulent otitis media, in all of which there was exhibited complete loss of function of the cochlear apparatus, but with good compensation of equilibrium; all recovered without operation.

Stress is laid upon this fact because the Vienna school advocates the labyrinth operation when there is complete loss of function, but the author states that differentiation should be made between labyrinthitis as a very early complication, within a day or two of the onset of the acute otitis without temperature or meningeal irritation, and labyrinthitis occurring after some weeks, together with bone complication of the mastoid process, with temperature and headache. The former are of the serous type and operation is contra-indicated; of the latter, a large proportion are of the purulent type, and where there is complete loss of function, the labyrinth operation is decidedly indicated.

OTTO M. ROTT.

**Barnhi'l, J. F.: Two Cases of Sarcoma of the Dura Mater Arising in the Vicinity of the Mastoid Process, with Vague Symptoms Simulating Mastoiditis.** *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxiii, 381.

By Surg., Gynec. & Obst.

The author reports the case of a woman, 36 years of age, who had pain in the right ear and right side of the face for ten years, gradually growing worse. A mastoid operation revealed a large granulating mass attached to the dura over and posterior to the sigmoid sinus and over the posterior lower portion of the temperosphenoidal lobe, which proved to be endothelial sarcoma. The patient died seven months later, probably of recurrence.

Another case was that of a man, 28 years of age, who had had a mastoid operation for pain in the ear. The mastoid wound filled with a large soft mass firmly attached to the dura, which proved upon pathological examination to be sarcoma. The growth was removed, but the patient died of meningitis three weeks later.

ELLEN J. PATTERSON.

**Braun, A.: A Case of Cavernous Sinus Thrombosis Complicating Suppurative Labyrinthitis.** *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxiii, 368.

By Surg., Gynec. & Obst.

The author reports a case of a child, seven years of age, with a history of discharge from the right ear for five years; and for three weeks, paresis of the right eye and face.

On admission to the hospital the child was apathetic, temperature 103° F., pulse 134; the blood-count showed a leucocytosis of 36,400, polynuclear 87 per cent; the blood-culture was negative; the right external auditory canal was filled by an aural polyp and a foul discharge. There was complete deafness in the right ear, a negative caloric reaction, but no spontaneous nystagmus.

At operation cholesteatoma and granulations were found in the antrum and middle ear; the facial nerve was exposed; all three semicircular canals, the vestibule, and the first and second turns of the cochlea were full of granulations; the lateral sinus and dura of the middle fossa were normal.

At post-mortem, four days later, a necrotic tract could be traced from the right internal auditory meatus to the inferior petrosal sinus. This sinus contained a thrombus which continued forward into the right cavernous sinus and through the circular sinus to the left cavernous sinus. In the upper wall of the left cavernous sinus was a perforation where the pia was covered with a sharply circumscribed patch of exudate. The lateral sinus was normal. The pituitary body was necrotic.

ELLEN J. PATTERSON.

**Ingersoll, J. M.: Temporosphenoidal Abscess, Secondary to Chronic Suppurative Otitis Media.** *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxiii, 404.

By Surg., Gynec. & Obst.

The author reports a case of a boy, fourteen years of age, who had had a discharge from the left ear for three years, and six weeks previous to admission



had been unconscious for several hours, followed by vomiting, headache, and dizziness.

Upon admission the patient was irritable and restless. There was a foul purulent discharge in the left ear, the posterior canal wall being prolapsed. There was no nystagmus, and no strabismus; the pupils were equal and eye grounds normal. The temperature was 97.4°, pulse 65. Deafness was complained of; cerebation was slow; a lumbar puncture was made and the blood count was normal.

No brain abscess could be located by radiograph, so a radical mastoid was done. Four days later the temperature was 102°, pulse 110; there was paralysis of the left external rectus muscle; ptosis of the right upper lid; beginning optic neuritis; irritability, severe headache, and at times unconsciousness.

The dura was exposed over the antrum, incised, and two ounces of thick foul pus was liberated with a brain knife. The recovery was uneventful.

A study of a radiograph taken one week after the operation, with gauze in the abscess cavity, when compared with the first radiograph, showed that with experience in interpreting stereoscopic radiographs of the mastoid, brain abscess can be located.

ELLEN J. PATTERSON.

**McBean, G. M.: Variations of Sphenoid Sinus Disease.** *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxiii, 419.  
By Surg., Gynec. & Obst.

The points taken into consideration by the author in studying the atypical forms of sphenoid sinus disease are the relations of the sinus (1) to the brain and meninges, (2) to the hypophysis cerebri, (3) to the cavernous sinus and internal carotid artery, (4) to the cranial nerves, (5) to the other nasal sinuses, and (6) to the nasopharynx.

These structures become implicated in the following ways:

1. By extension of the infection.
2. By exposure by necrosis of its bony wall from chronic suppuration.
3. By invasion of the sinus from the cranial cavity — as by pituitary tumors.
4. Irritation or paralysis of the optic, motor oculi, or trigeminal nerves, or the carotid plexus.
5. Association with the ethmoid in acute and chronic infections, polypi, atrophic rhinitis, and atrophic pharyngitis.

These conditions are illustrated by nine case reports, from a study of which the author draws the following conclusions:

1. Sphenoidal disease is much more common than was formerly believed possible.
2. With more careful postnasal examinations, especially with the nasopharyngoscope, many such cases will be discovered.
3. With the routine use of the probe and the catheter more cases will be recognized.
4. The sphenoid is, as a rule, the easiest of all nasal sinuses to catheterize.

5. Headache was the most constant symptom. Most often it was occipital and back of the corresponding eye. The symptom is very similar to that of eye-strain produced by ocular hyperphoria, and must be differentiated by exclusion.

6. The eye symptoms were variable or lacking. In some cases there was difficulty in using the eyes for close work. In one case there was inequality of the pupils and spasm of the accommodation. In the brain abscess and tumor cases there was bilateral papillitis. There was loss of vision in one case — the hypophysis tumor from involvement of optic nerve.

7. The discharge was of crusty character in two cases and of a mucopurulent character in seven.

8. Polypi were abundant in two old multiple sinus cases; there was a single polyp in a brain tumor case.

9. There was a subjective sense of order in only one case — that of atrophic pharyngitis.

10. There was a loss of smell in atrophic rhinitis and in old polyp cases.

11. There was suppurative ear disease in only two cases — the hæmorrhage case and one of the polyp cases.

Three cases resulted in death, all with post-mortem examination: Case 1. Brain abscess in the frontal lobe from sphenoid infection. Case 2. Spontaneous hæmorrhage from a diseased sphenoid. Case 3. Hypophysis tumor which invaded the sphenoid.

Two cases terminated in recovery: Case 4. Acute infection of the sphenoid with frontal pain. Case 5. Acute ethmosphenoiditis. Three cases terminated with benefit or cure after operation: Case 7. Atrophic rhinitis with sphenoid suppuration. Cases 8 and 9. Parisinusitis—one case had no treatment. Case 6. Chronic ethmosphenoid suppuration with atrophic pharyngitis.

OTTO M. ROTT.

**Braislin, W. C.: Further Remarks on the Use of Nitrate of Silver Applied within the Mouth of the Eustachian Tube for the Relief of Tinnitus.** *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxiii, 402.

By Surg., Gynec. & Obst.

In cases of congestion and swelling of the tubal mucous membrane accompanied by tinnitus, the condition is relieved more rapidly when local applications of nitrate of silver are used in addition to generally employed measures.

Two thin silver strands of wire are twisted firmly into one, and a small bit of cotton wound firmly on one end so that the size of the cotton pledget is not more than double the diameter of the wire, no fibers being allowed to extend beyond the end of the wire. After inflation of the tube the cotton moistened with a 4 per cent solution of silver nitrate is introduced through the eustachian catheter.

ELLEN J. PATTERSON.

# SURGERY OF THE NOSE, THROAT, AND MOUTH

## NOSE

**Ingals, E. F.:** *Nasopharyngeal Myosarcoma; Several Operations and Final Spontaneous Recovery.* *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxiii, 373.  
By Surg., Gynec. & Obst.

The author reports the case of a boy, thirteen years of age, with a growth filling the nasopharynx and right naris, so that the septum was crowded over obstructing the left nostril. The trouble was of three months' duration. By repeated operation the growth was removed and the pathological report was small-celled myxosarcoma. The growth was removed at various times by different methods during a period of several years.

Fourteen years later the tumor increased in size until the right cheek became very prominent, the vision was destroyed in the right eye, and both nares were occluded. After two years, the tumor began to atrophy spontaneously until the nares became free, although the prominence of the cheek and also the blindness of the right eye continued.

ELLEN J. PATTERSON.

**Lothrop, O. A.:** *The Use of a Section of the Scapula in Correction of a Nasal Deformity.* *Boston M. & S. J.*, 1914, clxxi, 303.  
By Surg., Gynec. & Obst.

The author describes this method of correcting with a strip of bone from the scapula, depressions of the nasal bridge with destruction of the supporting cartilage when the tip of the nose is depressed.

The technique of operation is as follows: Under ether anæsthesia, the submucous resection is done in the usual way in order to remove all obstruction to breathing. The patient is then turned on his left chest and through a three and one-half inch incision made over the vertebral border of the left scapula — cutting the muscles and being careful not to denude the bone of its periosteal covering — a strip of bone two inches long and about one-fourth inch wide is removed from the free border with bone-cutting forceps, and wrapped in wet sterile gauze. Through an incision in the under surface of the tip of the nose a subdermal passage is made in the nose-bridge extending to the distal extremity of the nasal bones, where the periosteum is cut and elevated and the nasal bones ground down with a rasp. The graft is inserted under the periosteum until the end reaches the frontal bone, and slight pressure is applied over the graft at its frontal end,

in order to hold it pressed against the nasal bones and stretch the contracting soft tissues of the tip.

ELLEN J. PATTERSON.

## THROAT

**Hitschler, W. A.:** *Not the Faucial but the Lingual Tonsil.* *Penn. M. J.*, 1914, xvii, 866.  
By Surg., Gynec. & Obst.

Disease of the lingual tonsil is characterized by constant clearing of the throat and a persistent dry hacking cough, which is increased by physical exhaustion, overuse of the voice, or dorsal decubitus, and should be differentiated from other diseases of the respiratory tract.

ELLEN J. PATTERSON.

**Lynch, R. C.:** *New Technique for the Removal of Intrinsic Growths of the Larynx.* *Laryngoscope*, 1914, xxiv, 645.  
By Surg., Gynec. & Obst.

The author has modified the Killian suspension laryngoscope and devised instruments by means of which he can dissect accurately, ligate bleeding points, cover raw surfaces by sutures, and do plastic work in the larynx with ease and accuracy.

For prolonged procedures and in children he prefers general anæsthesia, and for local anæsthesia he uses cocaine in a 10 per cent solution dropped directly into the larynx and trachea. With the parts perfectly quiet, he proceeds to dissect out the growth with angular knives, removing it in one mass without disturbing the integrity of the cartilaginous box, thus avoiding the danger of secondary stenosis and lessening the chance of recurrence in malignant cases.

He reports several cases of papilloma and one epithelioma removed by this method in which no recurrence has occurred as yet, the voice being restored immediately after the operation.

ELLEN J. PATTERSON.

**Davis, E. D.:** *The Importance of a Very Thorough Examination in Cases of Foreign Body Alleged to Have Been Swallowed or Inhaled.* *Lancet*, Lond., 1914, clxxvii, 493. By Surg., Gynec. & Obst.

The author cites eight cases to show the serious results, such as bronchiectasis, pneumonia, and death, which may result from delay or failure to recognize the impaction of a foreign body in the air or food passages. To avoid these serious results, a thorough and adequate examination should be made with the aid of the X-ray and suspension apparatus.

OTTO M. ROTT.



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## SURGERY OF THE EYE AND EAR

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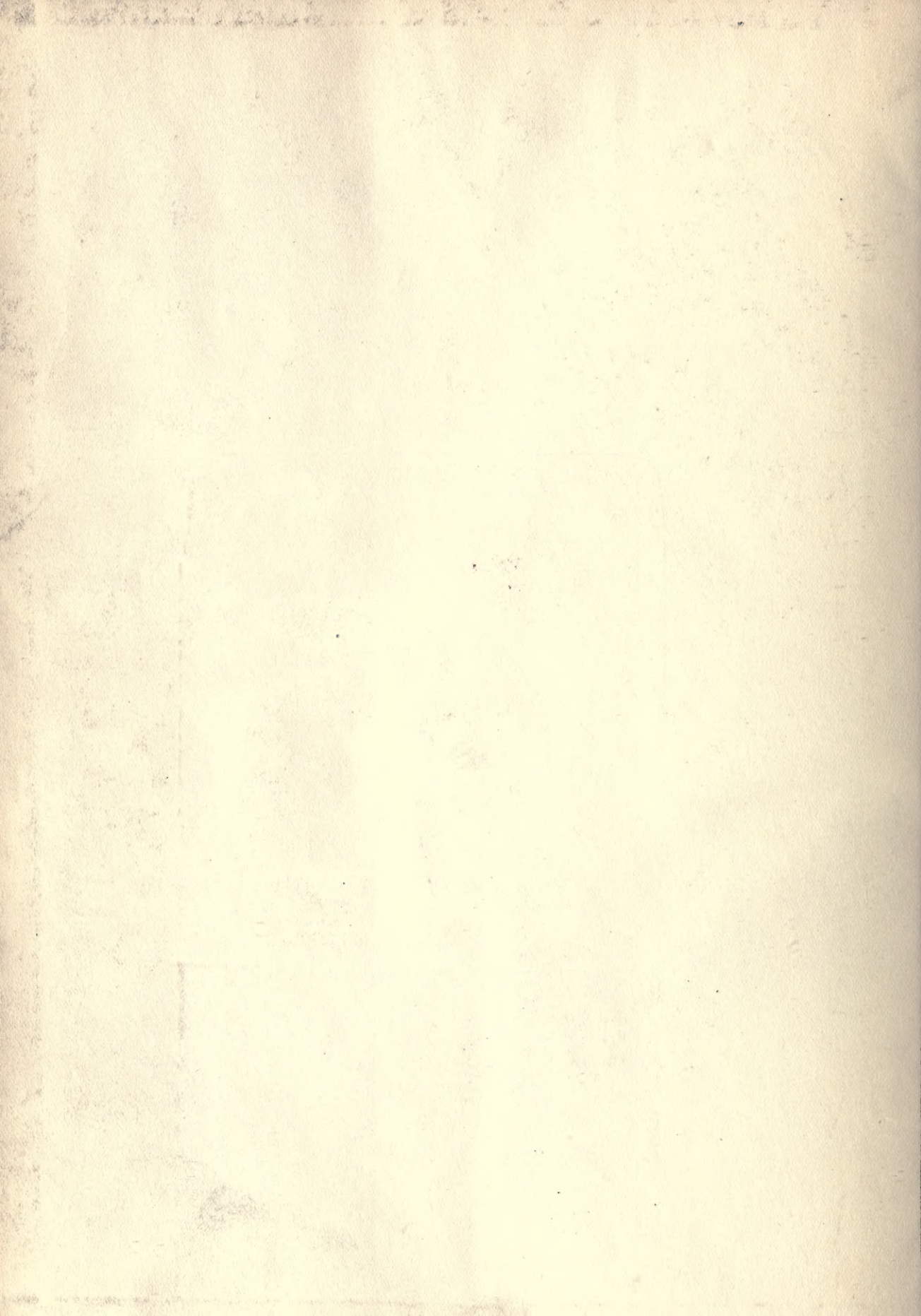














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